

**FIRST FIVE-YEAR REVIEW REPORT FOR
NORTH RIDGE ESTATES SUPERFUND SITE
KLAMATH COUNTY, OREGON**



JUNE 2021

Prepared by

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LIST OF ABBREVIATIONS & ACRONYMS

ACM	Asbestos-Containing Material
AOC	Administrative Order on Consent
ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
EES	Easement & Equitable Servitudes
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
f/cc	Fibers per cubic centimeter
FYR	Five-Year Review
GSA	General Services Administration
IC	Institutional Control
MAO	Mutual Agreement and Order
MBK	Melvin Bercot Kenneth Partnership
mg/kg	milligrams per kilogram
MRB	Marine Recuperation Barracks
NCP	National Contingency Plan
NPL	National Priorities List
ODEQ	Oregon Department of Environmental Quality
O&M	Operation and Maintenance
OTI	Oregon Technical Institute
OU	Operable Unit
PCME	Phase-Contrast Microscopy Equivalent
PRP	Potentially Responsible Party
RAO	Remedial Action Objective
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
UU/UE	Unlimited Use/Unrestricted Exposure

I. INTRODUCTION

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP) (40 Code of Federal Regulations (CFR) Section 300.430(f)(4)(ii)) and considering EPA policy.

This is the first FYR for the North Ridge Estates Superfund Site (the Site). The triggering action for this statutory review is the on-site construction start date of the operable unit 1 (OU1) remedial action. The FYR has been prepared because hazardous substances, pollutants or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The Site is divided into two OUs:

- OU1 encompasses the footprint of the former Marine Recuperation Barracks (the former barracks) and includes all areas where asbestos-containing material (ACM) or asbestos were observed or detected except for the former firing range.
- OU2 includes the former firing range area.

This FYR addresses OU1. The FYR does not address OU2. OU2 is currently undergoing remedial investigation and does not yet have a selected remedy.

The Northridge Estate Superfund Site Five-Year Review was led by EPA remedial project manager Robert Tan. Participants included Oregon Department of Environmental Quality (ODEQ) Operation & Maintenance (O&M) Site Manager Katie Daugherty and Ryan Burdge from EPA support contractor Skeo. The review began on 8/7/2020.

Please refer to Appendix A for a list of site references.

Site Background

The Site is about 3 miles north of the city of Klamath Falls, in Klamath County, Oregon (Figure 1). During World War II, the U.S. Department of Defense established a military barracks outside of Klamath Falls to treat Marines suffering from tropical diseases. The Site was acquired by the State of Oregon on October 28, 1947, to be used by the Oregon Technical Institute as a vocational college. The majority of the buildings were demolished in 1979. In 1993 construction began for a residential subdivision, North Ridge Estates.

The Site includes areas contaminated with asbestos as a result of improper demolition of about 80 military facilities built in the 1940s. These areas have been delineated as OU1 (the former barracks location, which covers about 125 acres) and OU2 (the Kingsley Firing Range, which includes about 46 acres). OU1 encompasses the footprint of the former barracks and a non-contiguous section south and southeast of the main barracks location. These locations include all areas where ACM or asbestos were observed or detected with the exception of the former firing range.

The current OU1 residential land use is expected to remain unchanged. OU1 is largely comprised of privately-owned parcels. Klamath County owns the two on-site repositories which include the common area (Memorial

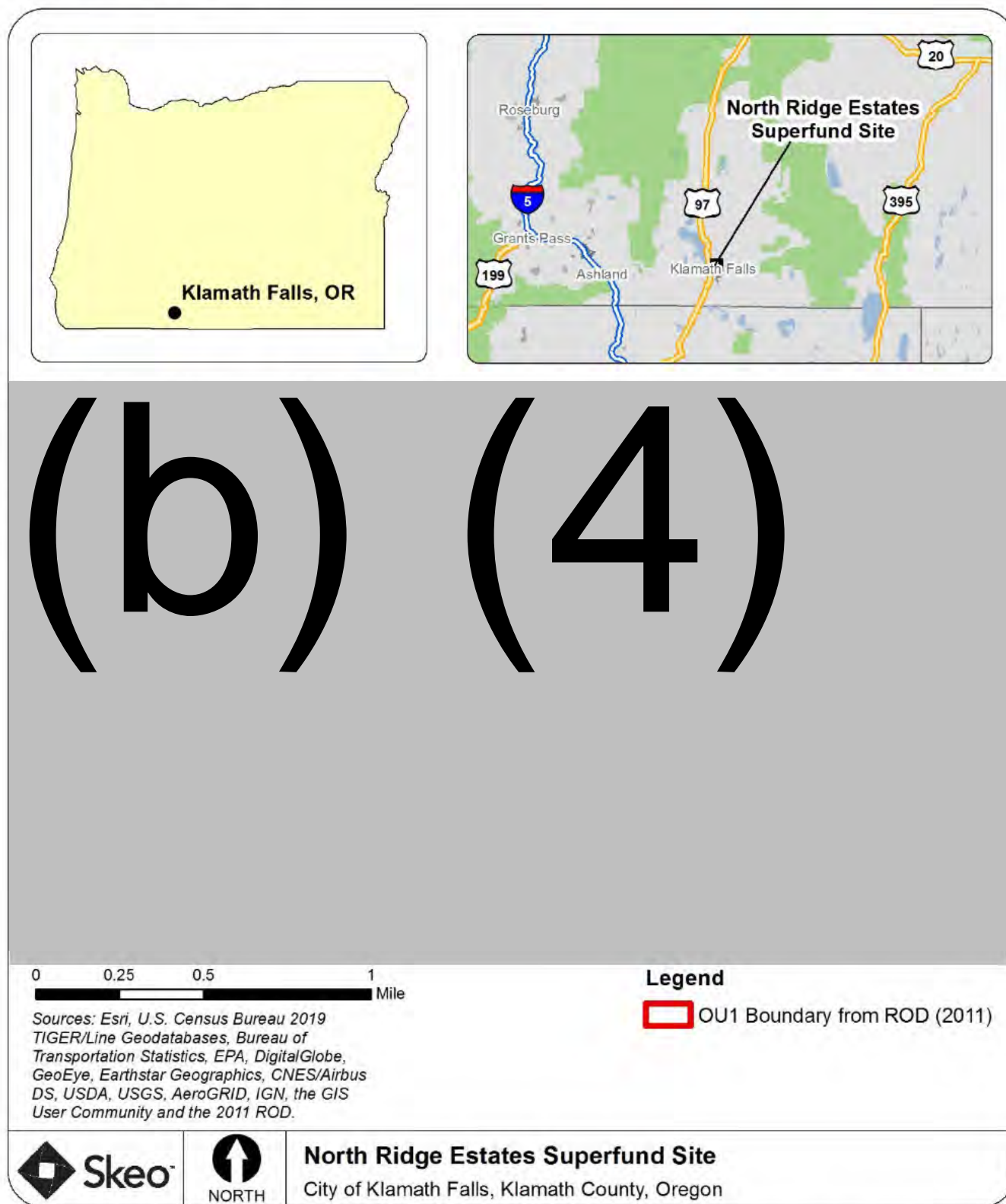
Park replacement) and roads with the exception of Thicket Court (a private road). The Thicket Court cul de sac properties includes former barracks buildings, the former brig (now a five-unit apartment building), and several residences on Thicket Court that were officers' quarters.

Please refer to Appendix B for the Site's chronology of events and Appendix C for additional site background information.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: North Ridge Estates		
EPA ID: ORN001002476		
Region: 10	State: Oregon	City/County: Klamath Falls/Klamath
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	Has the Site achieved construction completion? No	
REVIEW STATUS		
Lead agency: EPA		
Author name: Robert Tan, with additional support provided by Skeo		
Author affiliation: EPA Region 10		
Review period: 8/7/2020 - 6/6/2021		
Date of site inspection: 9/30/2020		
Type of review: Statutory		
Review number: 1		
Triggering action date: 6/6/2016		
Due date (five years after triggering action date): 6/6/2021		

Figure 1: Site Vicinity Map



Disclaimer This map and any boundary lines within the map are approximate and subject to change. The map is not a survey. The map is for informational purposes only regarding EPA's response actions at the Site.

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

The primary contaminant of concern at OU1 is asbestos.

EPA completed a baseline risk assessment in 2008 which determined that ACM and asbestos in the soil were likely to pose unacceptable risks to human health under current and potential future land use scenarios. EPA anticipated an increased risk from asbestos due to the continuing exposure of ACM from the subsurface to surface soil and continuing breakdown of ACM at the surface, yielding free asbestos fibers in soil. Soil disturbance activities could lead to inhalation by site residents and others.

During the OU1 Remedial Investigation, arsenic was also detected in soils at concentrations that could pose an exposure risk to human receptors. Soil arsenic contamination above the background level was limited to the former power plant (labeled as Parcel A on Figure 3) and was co-located with ACM. In the 2011 ROD, EPA determined that excess lifetime cancer risks to residents from arsenic were within EPA's acceptable cancer risk range of 1×10^{-6} to 1×10^{-4} , but noted that they exceeded ODEQ's cancer risk threshold of 1×10^{-6} .

Response Actions

Pre-Record of Decision (ROD) Responses

ODEQ responded to a complaint of accumulated asbestos debris at the Site in 1978. ODEQ observed a bulldozer driving over about 5 acres of demolition debris, described as "white, fluffy" insulation materials being blown by strong winds. ODEQ directed the collection and onsite burial of some asbestos demolition material.

In September 1979, EPA issued a compliance order to Melvin Bercot Kenneth Partnership (MBK) regarding hazardous air pollutants. The compliance order stated that MBK demolished structures containing asbestos and worked in an area with asbestos debris, causing the release of asbestos. The asbestos release resulted from MBK not removing ACM from buildings before demolition, as required by state and federal air quality regulations. MBK also failed to contain this ACM according to regulatory disposal practices.

In July 2001, ODEQ received a complaint about exposed asbestos pipe insulation. ODEQ visited the Site and observed two large piles of pipe that contained insulation. ODEQ also observed and collected samples of white to pale brown-colored, "platy-looking" rock fragments (presumably cement asbestos board, which is manufactured in thin layers) on the property and surrounding properties. An abatement contractor removed 180 feet of piping in August 2001. ODEQ issued a notice of noncompliance to MBK in September 2001 for asbestos regulations violations.

In June 2002, MBK entered into a Mutual Agreement and Order (MAO) with ODEQ (Order No. AQ/AB-ER01-250A). The MAO required a survey of all properties currently or previously owned by MBK for ACM and the removal of openly-accumulated ACM. The MAO also required MBK to remove buried ACM or place a deed restriction on properties known to have buried ACM pursuant to the 1979 EPA compliance order. In 2002, an MBK contractor collected about 50 tons of ACM from OU1 and disposed of it off site.

In March 2003, ODEQ and the Oregon Department of Health Services determined that the friable asbestos not removed in 2002 still posed a significant public health hazard. ODEQ began negotiations with MBK to prepare a remedial investigation and feasibility study (RI/FS), but MBK and ODEQ could not agree on the scope of the RI/FS. ODEQ requested a referral to EPA in April 2003 for emergency removal and assessment. In May 2003, MBK entered into an Administrative Order on Consent (AOC) with EPA. Consistent with the AOC, MBK conducted a time-critical removal action and streamlined risk assessment, and reimbursed EPA's costs to that point.

From August 2003 to August 2004, EPA sampled soil, indoor air, indoor dust, outdoor ambient air and outdoor air during soil-disturbing activity. Based on this sampling, EPA estimated that residents and others at the Site were at risk from asbestos-contaminated soil. EPA conducted emergency removals between 2003 and 2005 to reduce the volume of friable asbestos that had reached the surface due to frost heave and erosion.

In December 2004, EPA began negotiations with MBK for an AOC for an RI/FS. EPA issued a new unilateral order in March 2005. The May 2003 AOC was not terminated, and therefore MBK remained responsible for obligations of the May 2003 AOC in addition to being responsible for the obligations of the March 2005 unilateral order.

The unilateral order became effective in April 2005. The order directed MBK to conduct RI/FS activities at the Site under EPA oversight. Subsequent legal settlements (a Consent Decree and a Global Settlement Agreement) relieved MBK of the RI/FS obligations and other remedial actions in exchange for payment of certain costs, and EPA became the lead agency for the remaining work at the Site. The Consent Decree included multiple parties: MBK, and associated individuals; 18 homeowners in the NRE residential development; and multiple federal entities (the U.S. Department of Defense, the U.S. Department of Health and Human Services, the U.S. Department of Education, the General Services Administration, the U.S. Department of Justice, and EPA). The Global Settlement Agreement included multiple parties: MBK, and associated individuals; 18 homeowners; and multiple insurance companies.

The Consent Decree and the Global Settlement Agreement facilitated EPA's voluntary relocation of North Ridge Estates residents. Of 27 households deemed eligible, 15 opted to be relocated between June 10 and September 10, 2005. Ownership of the vacated properties was transferred to a receivership, pursuant to the Consent Decree, to manage the properties throughout the remedial action and then sell the properties.

In June and July 2005, EPA conducted an additional removal assessment at the Site. During this assessment, workers encountered significant quantities of ACM that had surfaced. Following the assessment, workers conducted abatement on three residential properties.

EPA conducted several more emergency removals between 2005 and 2009. The removals consolidated large volumes of ACM and associated contaminated soils into two on-site repositories and reduced the amount of friable ACM at the surface, but new ACM surfaced each year from frost heave and erosion. The removals could not permanently eliminate unacceptable risks at affected properties.

EPA listed the Site on the Superfund program's National Priorities List (NPL) on September 16, 2011.

CERCLA Response

EPA selected an excavation and containment remedy for OU1 in a 2011 OU1 ROD. The selected remedy provides protection of human health and the environment by eliminating exposure to ACM and asbestos-contaminated soils across OU1, and arsenic in soils at the former power plant area of OU1. Remedial action objectives (RAOs) for OU1 are:

1. Prevent inhalation exposures by humans to asbestos fibers in soil above levels that pose an unacceptable risk for residential use.
2. Prevent the migration of asbestos contamination by natural and man-made transport mechanisms from source locations to unimpacted locations and media.
3. Prevent the potential for human inhalation and incidental ingestion exposure to soil in the vicinity of the former power plant contaminated with arsenic concentrations above levels that pose an unacceptable risk to human health.
4. Indoor air contingency: Under current conditions, risks to residents from indoor air are estimated to be 7×10^{-7} (below EPA's risk range of 1×10^{-6} to 1×10^{-4} and ODEQ's risk level of 1×10^{-6}). Therefore, no remedial action is necessary inside homes at this time. After the excavation and capping components of the selected remedy have been performed, indoor air and dust will be sampled for

asbestos in each OU1 residence. If the risk level inside one or more residences exceeds 1×10^{-4} , a contingency for indoor cleaning of the affected residence(s) will be invoked. If EPA determines the contingent action is necessary, the following RAO will pertain to the contingent action:

- a. Prevent inhalation exposures by humans to indoor air containing asbestos fibers above levels that pose an unacceptable risk for residential use.

The selected remedy consists of the following actions:

- Excavate most contaminated materials (in surface and subsurface soils) on privately-owned and receiver-managed parcels.
- Install a visible marker layer to denote the extent of contaminated material excavated on each parcel.
- Cap remaining soils with clean soils thick enough to break the soil-to-air exposure pathway for any residual ACM or asbestos fibers in the soils. The caps will also keep ACM from migrating to the surface through natural processes such as frost heave or erosion. Caps on OU1 will include on-site repositories, soil caps, and existing structures, such as buildings, driveways and roads.
- Consolidate and place excavated contaminated material in on-site ACM repositories.
- Cap on-site repositories with clean soil thick enough to break the soil-to-air exposure pathway and to keep contaminated materials from migrating to the surface through natural processes such as frost heave or erosion. Implement access controls as necessary to protect the repositories.
- Apply institutional controls to the entire Site to prevent disruption of residual contamination and consolidated material in the on-site repositories.
- Conduct maintenance with ongoing monitoring (inspections and sampling) so capped areas are maintained and not damaged, exposure does not occur, and caps remain protective.
- Contingency: The selected remedy includes a contingency for interior cleaning, if necessary. After excavation and capping are completed, indoor air and dust sampling will be conducted inside OU1 residences.

Rather than establish a chemical-specific cleanup level, the ROD concluded that remedial action is needed for all locations with known ACM contamination to address current and future risks from asbestos. EPA signed an Explanation of Significant Differences (ESD) in 2019 to change the allowable arsenic level to site-specific background in OU1 soils of 12 mg/kg.

Status of Implementation

Although the selected remedy for ACM would also address exposure risks from soil arsenic, a site-specific arsenic background study was performed in 2011 and demonstrated that the soil arsenic concentrations at OU1 were below natural background concentrations. As noted above a site-specific background level was documented in an ESD in 2019.

Between July 2016 and December 2018, contractors completed the OU1 remedial action. Contractors excavated a minimum of two feet and up to a maximum of four feet of ACM and contaminated soil from the entire area of OU1 with limited exceptions (i.e., beneath house footprints). Additional areas of ACM were identified outside of the OU1 footprint and were also excavated (Figure 1). In areas where ACM was present after reaching excavation depth, a marker barrier consisting of oversized rock and an orange liner was installed. At least two feet of clean soil was placed over excavated areas as a protective cap. The cap surface was vegetated, paved, or restored to the original use (e.g., concrete sidewalk, gravel drive, or deck) As part of the remedial work, the contractors also prepared as-built drawings for each property.

Contractors placed the excavated ACM and contaminated soil in two on-site repositories, and covered them with protective caps (see Figure 2). These repositories are the Memorial Park Repository (on Parcel MBK-D and Parcel L) and the Swimming Pool Repository (on Parcels AG, MBK-E, AL, and portions of Parcels AI, BL and Y). See Figure 3 and Appendix D for a full list of parcels. Contractors relocated Memorial Park onto an area of

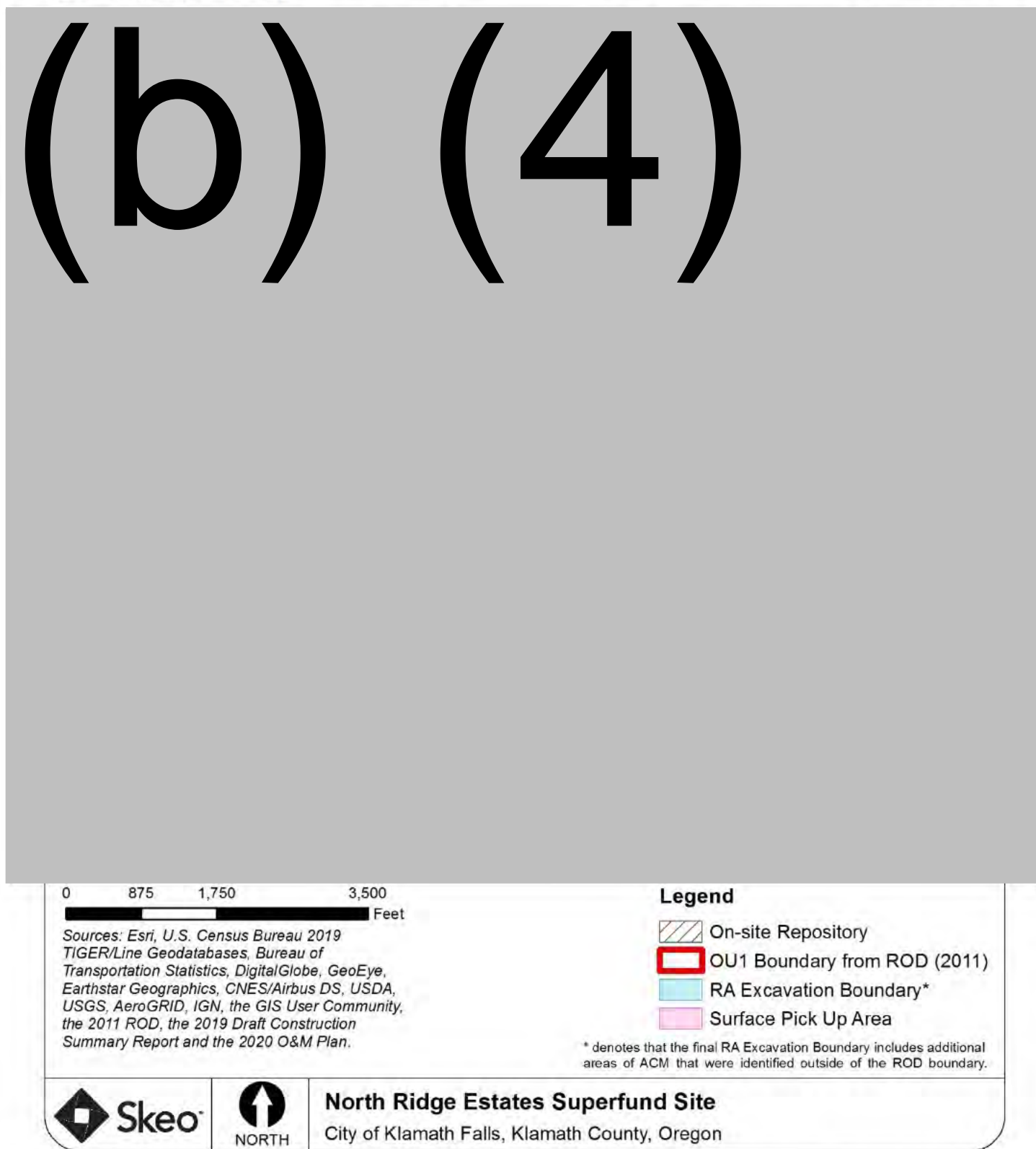
Parcel AG that was outside of the repository footprint. The park was relocated to utilize and enhance existing stormwater conveyance infrastructure present at the former park location.

A surface pickup of ACM was completed along a service road south of the excavation on Parcel MBK-F during RA construction. ACM found at this location included several isolated pieces along the road surface. EPA determined that asbestos along the service road was surficial and did not require excavation.

As specified in the RAOs, the Site's remedy includes an indoor air contingency. At the time of the ROD, no remedial action was needed for exposure to indoor air because potential risks to residents were estimated to be 7×10^{-7} , which is below EPA's risk range of 1×10^{-6} to 1×10^{-4} and ODEQ's risk level of 1×10^{-6} . The ROD stated that, after excavation and capping, contractors would sample indoor air and dust for asbestos at each OU1 residence. The ROD stated that, if this sampling found risk levels exceeding 1×10^{-4} , EPA would invoke a contingency for indoor cleaning of the affected residence(s). As cleanup progressed, EPA conducted additional post excavation sampling to determine whether the indoor air contingency would be invoked. The results of the sampling indicated that the indoor air did not exceed risk levels at any of the properties and therefore the indoor contingency was not invoked. Results of the indoor air sampling are discussed in the Data Review section of this document and in Appendix L.

In 2020, EPA and ODEQ conducted a joint inspection after remedial action construction. The inspection observed two issues of concern: a resident violated property institutional controls on Parcel O and the remedial project manager found a lack of established vegetation on Parcel AG. These issues are pending resolution by EPA and DEQ as of the time of this report. Ongoing monitoring of vegetation and property owner compliance with institutional controls will continue through annual site inspections to be performed by the State during O&M.

Figure 2: Detailed Site Map



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Institutional Control (IC) Review

Institutional controls at the Site minimize risks posed by ACM and contaminated soil present under the caps and ensure that the cap remains protective. These controls allow for current land use activities but restrict uses that could damage caps, liners and on-site repositories. All but one property within OU1 are subject to institutional controls.

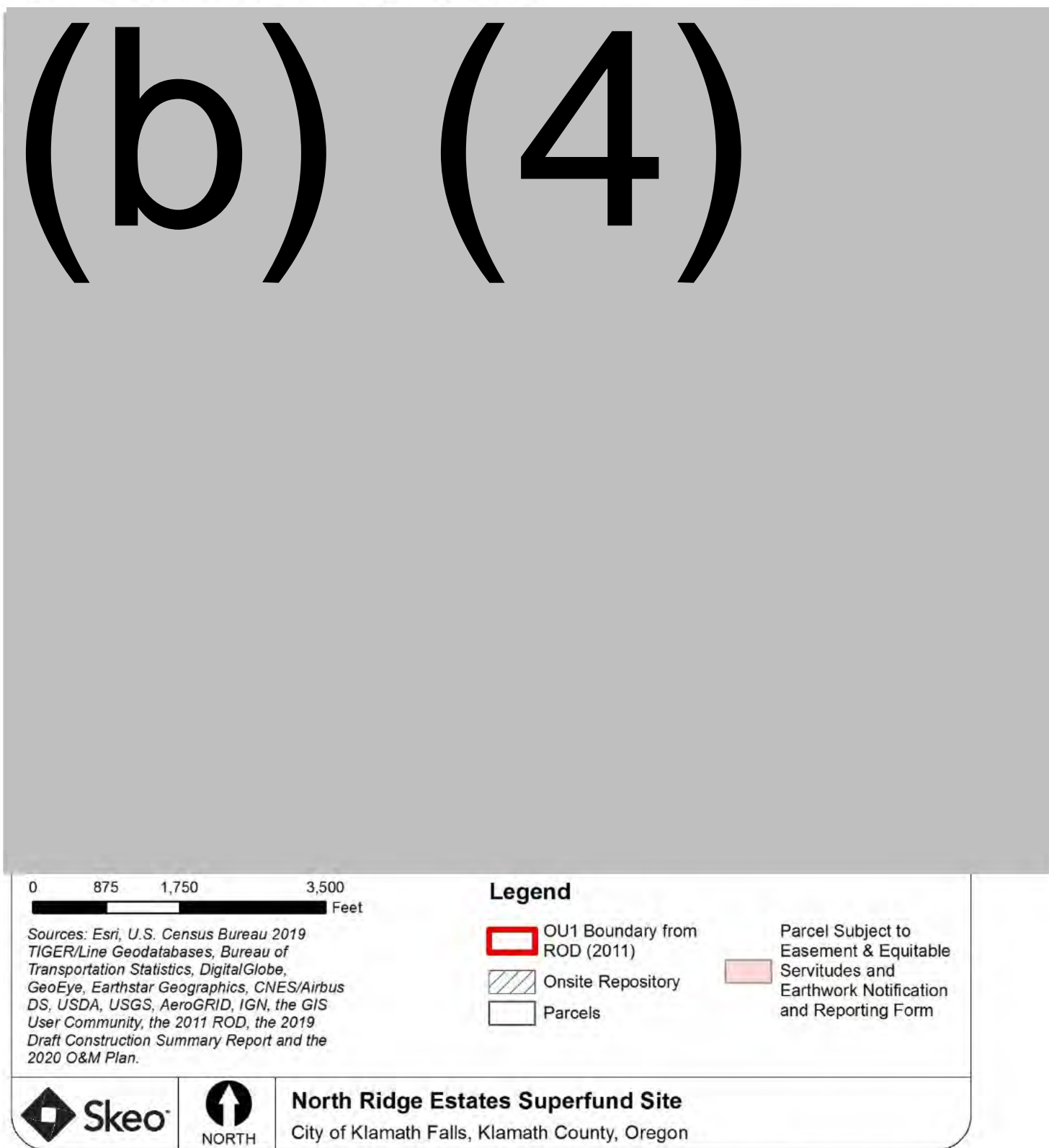
There are four institutional control instrument types used at the Site and they are implemented based on property type (Table D-1 and Table 1):

- **Proprietary Controls**
 - Easement & Equitable Servitudes: Each private property (except Parcel BQ) where excavation was performed is subject to an Easement & Equitable Servitudes (EES) filed with Klamath County. The EES grants ODEQ and EPA the right to enter and inspect the property and, if necessary, to conduct investigation, removal, and remedial measures and inspections. Each EES also includes engineering controls and earthwork restrictions (see Appendix J for an example).
 - EESs on properties with stormwater conveyance features (e.g., culverts, surface channels, or inlet structures) also include the requirement for property owners to routinely maintain stormwater features to preserve stormwater conveyance capacity. The owners also may not alter, impede, or restrict the flow of stormwater conveyed by these features.
 - EES on the ACM and asbestos contaminated soil repositories and on the former barrack solid waste repository prohibit building on the footprint of repositories.
 - EES on Parcels MBK-A and MBK-B prohibit building. Building on Parcel MBK-C is limited to one, non-residential use, slab on grade not to exceed 30 feet by 40 feet.
 - Additional post excavation testing was performed on Parcel BQ. This testing demonstrated the asbestos contamination was removed and the parcel meets RAOs without the use of engineering controls (i.e., protective cap) or institutional controls.
- **Governmental Controls**
 - Earthwork Notification and Reporting Form: Property owners or contractors are required to submit an Earthwork Notification and Reporting Form to ODEQ prior to any action that will or likely will penetrate the protective cap. This notification is separate from other city and county permits. This institutional control also establishes requirements for personal protective equipment; temporary and permanent engineering controls; and potentially-contaminated soil handling, storage and disposal procedures.
- **Informational Devices**
 - Notification of Environmental Contamination: Demolition of barrack buildings did not occur in the Thicket Court area of OU1, except on Parcel BO. However, abandoned underground steam pipes encased in friable asbestos-containing pipe wrap are present as ACM on these properties. Left undisturbed the ACM do not pose a risk to human health or the environment. A Notice of Environmental Contamination was filed with Klamath County on all Thicket Court properties (except Parcel BO which has an EES) to provide notice of the ACM and of the requirement for an Oregon licensed asbestos abatement contractor to be utilized if the abandoned pipes are disturbed.
- **Community and Contractor Awareness**
 - The Community and Contractor Awareness Program, a long-term community education and awareness program to be administered by ODEQ, was established by EPA and ODEQ to promote community involvement and develop and maintain awareness of engineering and institutional controls at the Site.

Table 1: Summary of Implemented Institutional Controls (ICs)

Media, Engineered Controls, and Areas That Do Not Support UU/UE Based on Current Conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcels	IC Objective	Title of IC Instrument Implemented and Date
Soil	Yes	Yes	All parcels completely or partially within the boundary of OU1, excluding roads and rights of way, and parcels BI, BQ and properties along Thicket Court (see Figure 3; full list of parcels in Appendix D)	Limit unacceptable use of parts of the properties where asbestos contamination remains; protect capped areas; protect capped on-site repositories from activities that could damage or degrade the caps; inform residents, construction and excavation workers of the presence of and risks from exposure to contaminated materials on site; and help property owners mitigate risks.	Proprietary Control Instrument: Property-specific EES record between 8/14/2017 and 3/25/2020.,
Soil	Yes	Yes	All parcels within the boundary of OU1, excluding parcels BQ and properties along Thicket Court (see Figure 4; full list of parcels in Appendix D)	Establish requirements for personal protective equipment; temporary and permanent engineering controls; and potentially-contaminated soil handling, storage and disposal procedures.	Governmental Control Instrument: Property-specific Earthwork Notification and Reporting Forms, recorded between 8/14/2017 and 3/25/2020.
Soil	Yes	Yes	Properties along Thicket Court have abandoned underground steam pipes encased in friable asbestos-containing pipe wrap present but were not excavated during remedial action (see Figure 5)	Provides notice of the ACM and requirement for an Oregon licensed asbestos abatement contractor if the abandoned pipes are disturbed	Informational Device Instrument: Notices of Environmental Contamination, recorded between 11/28/2017 and 6/8/2018.
Soil	Yes	Yes	All parcels completely or partially within the boundary of OU1 (a full list of parcels can be found in Appendix D)	Promote community involvement and develop awareness of ICs to be implemented at the Site.	Informational Device Instrument: Community and Contractor Awareness

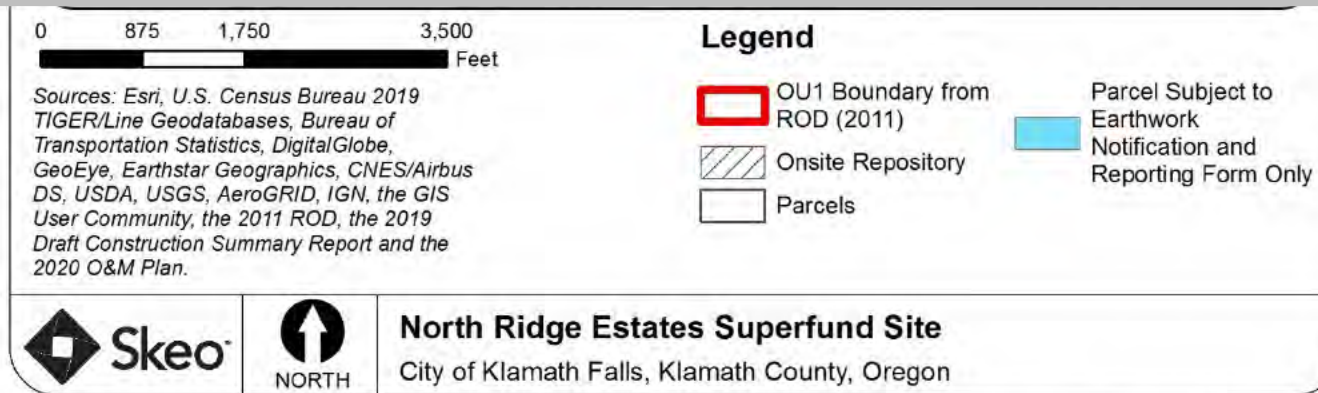
Figure 3: Institutional Control Map – Proprietary Controls



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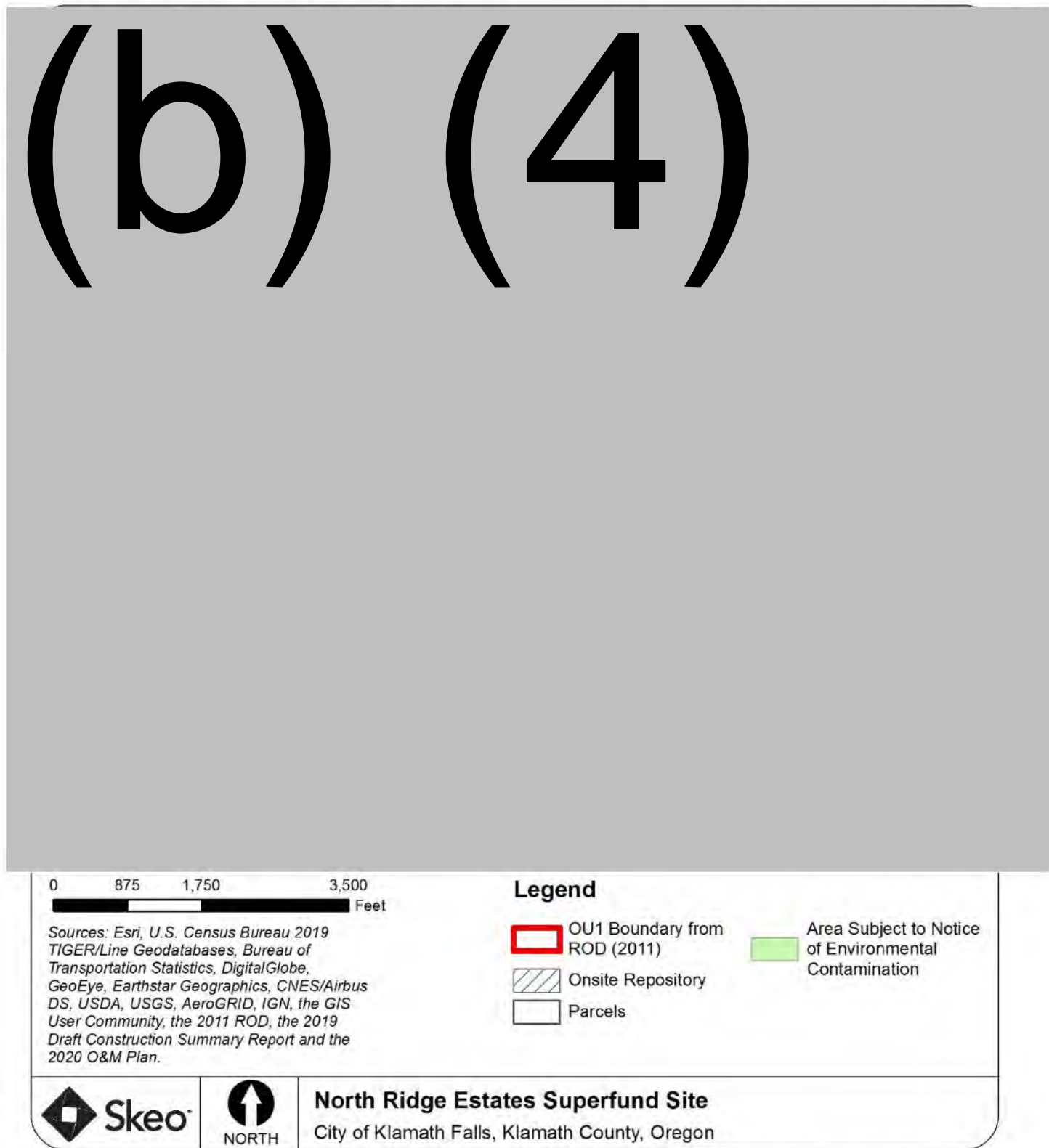
Figure 4: Institutional Control Map – Governmental Controls

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Figure 5: Institutional Control Map – Informational Controls



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Systems Operations/Operation and Maintenance (O&M)

EPA approved the O&M Plan in 2020; the plan describes activities to maintain the effectiveness of the remedy, including inspection and maintenance of the cap; maintenance of vegetation, paved surfaces, conveyance features and the on-site repository; and enforcement of institutional controls.

During the O&M phase, the Site's stakeholders have the following O&M responsibilities:

- EPA is responsible for oversight of O&M activities performed by ODEQ for the life of the expected O&M period.
- ODEQ is responsible for conducting annual inspections to monitor the condition of the site-wide protective cap and repositories, IC compliance, and enforcement.
- Klamath County is responsible for enforcing local regulations and bylaws and maintaining municipal infrastructure (e.g., roads, ditches and culverts) in county rights-of-way.
- Property owners are responsible for being good stewards of their property, including complying with all institutional controls (i.e., EES, Notice of Environmental Contamination), maintaining the cap, and reporting any observed or potential issues.
 - Property owners are responsible for informing anyone who may breach the cap, such as landscape contractors, of the potential presence of asbestos and are responsible for informing ODEQ, through a formal notification process, of any work that may impact the cap. Property owners must also provide ODEQ with access to their property for inspection of the caps in accordance with the EES.
- Contractors and utility companies (including the City of Klamath Falls) performing work within the Site boundary, including the rights-of-way, are responsible for notifying ODEQ of the work to be performed, especially when excavation work is expected to breach the caps (e.g., waterline repair).

III. PROGRESS SINCE THE PREVIOUS REVIEW

This is the first FYR for the Site.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Community Involvement and Site Interviews

EPA published a public notice through a press release on December 9, 2020 (see Appendix I). The notice stated that the FYR was underway and invited the public to submit any comments to EPA. The results of the review and the report will be made available at the Site's information repository, the EPA Region 10 Superfund Record Center, located at 1200 6th Avenue, Suite 155, Seattle, Washington 98101. They can also be contacted by email at R10_SF_Records_Center@epa.gov.

During the FYR process, EPA conducted interviews to document any perceived problems or successes with the remedy that has been implemented to date. Skeo, on behalf of EPA, sent emails to all property owners with an interview questionnaire and contact information should a phone interview be preferred. Two responses were received (Appendix E). Respondents noted no issues with the Site. One response indicated potential confusion on whether ICs applied to the respondent's property on Parcel BQ. EPA has followed up with the respondent to clarify that ICs do not apply.

Data Review

Post Excavation Indoor Air Sampling

Per the contingency for indoor air in the ROD, contractors conducted activity-based sampling after simulating typical activities that would generate dust in a home, such as cleaning. Analysis of activity-based samples tested airborne particulates for asbestos fibers. Longer-term stationary samples were also collected. An initial test case evaluated the sample flow rates and procedures. After success of the test case, contractors completed home sampling as excavation progressed. All samples were below the post-remediation action levels of 0.001 phase-contrast microscopy equivalent (PCME) fibers per cubic centimeter (f/cc) for stationary samples (maximum detection of 0.0006 PCME f/cc at parcels AP, F and R) and below the 0.1 PCME f/cc for activity-based samples (maximum detection of 0.0298 at parcel AP). Results of sampling are included in Appendix L.

Site Inspection

EPA remedial project manager Robert Tan and ODEQ O&M Site Manager Katie Daugherty conducted the site inspection on September 30, 2020. Appendix F includes the site inspection checklist and Appendix G includes the site inspection photographs.

The inspection found that the caps and on-site repositories are functioning as intended. The inspection identified some items of concern, most of which are minor and do not require repair at this time; these include minor rills, stressed or dead newly-planted trees, partially-blocked stormwater conveyances, and minor animal damage to caps. The inspection also brought to light the following issues:

- Parcel AK/Old Fort Road/Scott Valley Drive - Gullies are forming at the intersection and running into the ditch below Parcel AK.
- Parcel AM/Old Fort Road - A gully and several rills are forming and draining into the ditch below Parcel AM. Additionally, soil settling is not considered significant at this time but should be monitored.
- Antenna Road (Surface Pick Up Area) - A piece of ACM was found in the roadway at Antenna Road. It was placed in a sample container and removed.
- Parcel AQ - Rills and gullies were found draining to the drainage ditch along Old Fort Road.
- Parcel BM - Soil along the eastern edge of the cap/slope is settling, creating a difference of 2 to 4 inches between the cap and the native grade.
- Parcel BP - Two gullies as deep as 12 inches were found on the eastern part of the property.
- Parcel C - Gullies more than 6 inches deep are forming.
- Parcel MBK-G - Owner was informed of ACM siding on the ground surface. Confirmation of ACM and possible repair to the rills and gully are considered significant findings; however, the ACM would be the responsibility of the owner.
- North Ridge Drive, Old Fort Road, Scott Valley Drive, and Thicket Court - There are obstructed culverts throughout the Site. Each individual culvert obstruction is insignificant, but the collective issue is considered significant and should be evaluated. At the time of this report, the State was working with Klamath County to clean the culverts of accumulated runoff material.
- Parcel O - Gullies and the clearing of vegetation for potential installation of a pond is considered a significant finding.
- Parcel S - A gully was found on the eastern part of the property.
- Swimming Pool Repository (Parcels AG, MBK-E, AL, AI, BL and Y) - Several rills and a rill that transitions to a gully were noted on the slope of the repository.
- Parcel WWTP - Several slopes have had significant erosion or excavation undertaken. Additionally, there are vehicle ruts as deep as 1 foot on parts of the dirt cap.

These findings will continue to be monitored through future annual site inspections conducted by the State during O&M.

One major finding was the violation of institutional controls on Parcel O, where the property owner excavated greater than 2 feet below ground surface to construct a pond. ODEQ and the property owner determined that the violation resulted from a misunderstanding about the notification process property owners must follow before

digging under the protective cap (greater than 2 feet below ground surface); see Appendix H – Supporting Documentation. The ODEQ, with input from EPA, has now developed a new informational fact sheet for site residents (Appendix K). Further resolution of the Parcel O violation is pending as of the time of this review.

EPA also noted part of Parcel AG, located within the Memorial Park, where vegetation has not become established. Vegetative growth is also impeded above the Memorial Park Repository, where surplus woodchips from remedial construction were distributed. Vegetation is an important element of the remedy and is needed to prevent erosion of the cap.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Yes, the review of decision documents, support documentation and the site inspection indicate the remedy is functioning as intended. ACM and asbestos contaminated soil were excavated to a minimum depth of 2 feet and a maximum depth of 4 feet, backfilled with at least 2 feet of clean soil, capped and revegetated or resurfaced to restore the properties for residential use. Excavated ACM and asbestos contaminated soils were placed in the two on-site repositories. The completed remedial action prevents human inhalation of asbestos fibers that pose an unacceptable risk for residential use. The remedial action also prevents the migration of asbestos contamination to unaffected locations and media.

O&M inspections and procedures will formally begin in 2021 and will ensure effectiveness. Although occurring prior to the completion of construction, ODEQ completed a preliminary annual inspection in September 2020. A number of issues related to vegetation and stormwater features were noted during the September 2020 FYR site inspection. At the time of this report, EPA and the State were in the process of addressing these issues. It is expected that many of these types of issues would be identified and addressed as part of routine O&M activities being conducted at the site. The exception is on Parcel O, where the inspection found that the property owner excavated greater than 2 feet below ground surface to construct a pond. This activity represents a violation of the institutional controls. Institutional controls are in place on the caps to prevent site uses that are incompatible with the selected remedy. The ROD indicated that all affected parcels within the boundary of OU1 should be subject to institutional controls, access controls, or both. There are no access controls required on the Site. There are several institutional controls on site that have been implemented (Appendix D). The Site's institutional controls on the Site have been mostly successful. However, as noted above and illustrated by soil excavation at Parcel O by the resident, the notification process for digging below the caps might not be clear. The new informational awareness fact sheet (Appendix K) and community outreach has been implemented as a result and will improve the community's knowledge of institutional controls and their requirements.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels and RAOs used at the time of the remedy selection still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels and RAOs used at the time of remedy selection are still valid. As the ROD did not define chemical-specific cleanup levels, the completion of remedial action satisfies the RAOs. The RAOs for arsenic contaminated soils near the former power plant were achieved by excavation and placement in a capped onsite repository as part of the site final remedy and the site specific background level of arsenic was set in the 2019 ESD and has not changed. The indoor air contingency RAO was not invoked, as all samples were below EPA's risk range of 1×10^{-6} to 1×10^{-4} and ODEQ's risk level of 1×10^{-6} for asbestos.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?

No other information has come to light that could call into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the FYR:
OU1

OTHER FINDINGS

One additional recommendation was identified during the FYR. This recommendation does not affect current and/or future protectiveness.

- On-site excavation on Parcel O by the current resident suggests potential issues with the institutional controls and excavation approval requirements. However, this violation was promptly reported to the state and the property owner partially followed the excavation and notification requirements; this indicates that this violation likely resulted from the resident misinterpreting the requirements rather than intentional violation. To address this in the future, the state has developed an information fact sheet to distribute among residents to better clarify institutional control requirements. EPA has reviewed and provided approval of the draft fact sheet as of October 2020. The final fact sheet is attached as Appendix K.

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement	
<i>Operable Unit:</i> OU1	<i>Protectiveness Determination:</i> Protective
<i>Protectiveness Statement:</i> The remedy at OU1 is protective of human health and the environment. ACM and asbestos contaminated soils were excavated, backfilled with clean soil, capped, and vegetated or resurfaced to restore the original use. Monitoring and institutional controls are in place that prevent any activities that are not compatible with the selected remedy.	

VIII. NEXT REVIEW

The next FYR Report for the North Ridge Estates Superfund site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

Apex: Annual Inspection Summary Report: North Ridge Estates – Operable Unit 1, September 28, 2020.

CDM Smith: Operations and Maintenance Plan, North Ridge Estates Superfund Site – Operable Unit 1, June 2020.

EA Engineering, Science, and Technology, Inc: Draft Construction Summary Report, North Ridge Estates Superfund Site – Operable Unit 1, June 2019.

EPA: Explanation of Significant Differences, North Ridge Estates Superfund Site – Operable Unit 1, February 22, 2019.

EPA: Superfund Record of Decision: North Ridge Estates Superfund Site – Operable Unit 1, September 22, 2011.

Rabe Consulting: Vegetation Evaluation, North Ridge Estates, October 28, 2019.

APPENDIX B – SITE CHRONOLOGY

Table B-1: Site Chronology

Event	Date
ODEQ responded to complaints about openly-accumulated asbestos; ODEQ directed the collection and on-site burial of the material	1978
EPA issued Compliance Order No. X79-08-14-113 regarding hazardous air pollutants to MBK; MBK agreed to change demolition and disposal practices at the Site	September 1979
ODEQ received a complaint about exposed asbestos pipe insulation	July 29, 2001
Abatement contractor removed 180 feet of steam pipe insulation	August 2001
ODEQ issued a notice of noncompliance to MBK	September 2001
MBK and ODEQ entered an MAO; all parcels currently or previously owned by MBK were surveyed for the presence of ACM MBK contractors removed and disposed of surface ACM	June 2002
MBK entered into an AOC with EPA	May 2003
MBK contractors removed surficial and hot spot ACM from 31 parcels	2003
ODEQ and Oregon Department of Health Services determined asbestos continued to pose a significant public health hazard	March 2003
ODEQ requested a referral to EPA for emergency removal and assessment	April 14, 2003
MBK contractors stabilized ACM burial pile to combat erosion	October 2003
EPA removed lead-contaminated soil identified at the MBK-C property	2004
EPA directed MBK to conduct RI/FS activities	March 15, 2005
MBK conducted RI/FS activities under unilateral order	April 2005
EPA signed an action memorandum approving a temporary relocation action; residents vacated properties	April 26, 2005
MBK contractors completed removal of 330 pounds of magnesium silicate asbestos material from three properties at OU1	June/July 2005
EPA issued Stop Work Notice to MBK	July 18, 2005
EPA began combined RI/FS	September 26, 2005
Global Settlement Agreement	August 2005
The Site's different parties including the developer, the homeowners, the Department of Justice and EPA agreed to a Consent Decree	January 2006
EPA contractors identified and removed 1,300 pounds of surficial ACM material and additional ACM and asbestos contaminated soil, removed steam pipes on six properties, created a temporary on-site repository and excavated PCB- and lead-contaminated soils	2008
EPA contractors picked up additional surficial ACM, extended covers, removed PCB- and lead-contaminated soils and eroded soil	2009
EPA completed the RI/FS	March 25, 2010
EPA proposed the Site for listing on the NPL	March 10, 2011
EPA finalized the Site on the NPL	September 16, 2011
EPA signed the ROD	September 22, 2011
EPA started remedial design	September 23, 2011
EPA completed remedial design	April 17, 2014
EPA contractors started remedial action	September 19, 2014
EPA updated and finalized remedial design	December 2015
EPA contractors started construction	July 2016
EPA contractors completed a substantial portion of construction	December 2018
EPA released ESD for arsenic	February 28, 2019
EPA completed remedial action inspection	September 30, 2020

APPENDIX C – SITE BACKGROUND

North Ridge Estates is a residential subdivision about 3 miles north of Klamath Falls, in Klamath County, Oregon. The Site is contaminated with ACM resulting from the improper demolition of about 80 military barracks buildings initially built in the 1940s. OU1 is on Old Fort Road and North Ridge Drive and covers about 125 acres.

Marine Recuperation Barracks (1944 to 1946)

The Site was originally developed in 1944 as a facility to treat Marines suffering from tropical diseases contracted during World War II. The base was active from April 1944 to February 1946. In March 1946, the Navy declared the entire 745 acres surplus property.

The Marine Recuperation Barracks (MRB) was composed of 82 buildings, including a sewage treatment plant, horse stables, warehouse, brig, medical officers' quarters, animal hospital, dependent hospital, post exchange, auditorium, gymnasium, swimming pool, fire house, mess hall, dispensary, laboratory, laundry, bakery, maintenance garage, bachelors' quarters, central power plant, library and 30 barracks. Most of the buildings were constructed between Old Fort Road and the present-day North Ridge Drive. Many of the materials used for improvements on the Site contained asbestos, such as siding, roofing, floor tiles and steam pipe insulation.

MRB buildings still standing today include a warehouse (Parcel MBK-G), the former brig (Parcel BM), which has been renovated into a five-unit apartment building, and several residences on Thicket Court used as officers' quarters and later as faculty housing by the Oregon Technical Institute (OTI). Old concrete foundations for many of the other former MRB buildings were removed or buried during remedial action.

Oregon Technical Institute (1947 to 1964)

The state of Oregon acquired the property in October 1947 to be used for the OTI (now known as the Oregon Institute of Technology). During OTI's occupancy of the Site, six structures were demolished. It is believed that material from the demolition of these structures was used by the OTI Superintendent of Facilities to repair and maintain other buildings on site. Two new buildings were built next to the maintenance garage during OTI occupancy. OTI moved from the Site in May 1964, having added seven new buildings and acquired 40 additional acres of land.

General Services Administration (1964 to 1965)

Ownership of the Site was transferred to the General Services Administration (GSA) in December 1964 when OTI left the property. An inspection conducted by GSA in July 1964 showed the Site to be virtually intact; however, some buildings had fallen into disuse and were shuttered and boarded.

Private Ownership (1965 to 1977)

In 1965, a partnership of private individuals purchased the property from GSA. This private partnership owned the property until 1977. It is reported that while this partnership owned the Site, the owners stripped the vacant buildings of salvageable materials such as equipment, furnishings, copper and wood. At least 22 buildings were demolished while this partnership owned the property.

MBK Ownership (1977 to 2006)

In December 1977, MBK purchased the property for development. In 1993, Klamath County approved subdivision plans, and construction of homes began later that year. MBK sold properties in the subdivision from 1994 until 2002.

APPENDIX D – PARCEL LIST

Table D-1. OU1 Institutional Control Matrix

Parcels (Tax Lot #)	Instrument Implementation Area	Easement and Equitable Servitude	Contaminated Soil Disturbance Notification Form	Notice of Environmental Contamination	Community and Contractor Awareness
A R-3809-015A0-01800	Private Property	•	•		•
AK and BJ R-3809-015D0-02600	Private Property	•	•		•
AM R-3809-015D0-01000	Private Property	•	•		•
Antenna Road (surface pickup area)	Private Property	•			
AP R-3809-015D0-01500	Private Property	•	•		•
AQ R-3809-015D0-01600	Private Property	•	•		•
AR R-3809-015D0-01800	Private Property	•	•		•
AS R-3809-015D0-01100	Private Property	•	•		•
AT R-3809-015A0-00400	Thicket Court Asbestos Pipe			•	•
AU R-3809-015A0-00500	Thicket Court Asbestos Pipe			•	•
AV R-3809-015A0-00600	Thicket Court Asbestos Pipe			•	•
AW R-3809-015A0-00700	Thicket Court Asbestos Pipe			•	•
AX R-3809-015A0-00800	Thicket Court Asbestos Pipe			•	•
AY R-3809-015A0-00900	Thicket Court Asbestos Pipe			•	•
AZ R-3809-015A0-01000	Thicket Court Asbestos Pipe			•	•
B R-3809-015B0-00600	Private Property	•	•		•
BA R-3809-015A0-01100	Thicket Court Asbestos Pipe			•	•
BB R-3809-015A0-01200	Thicket Court Asbestos Pipe			•	•
BC R-3809-015A0-01300	Thicket Court Asbestos Pipe			•	•

Parcels (Tax Lot #)	Instrument Implementation Area	Easement and Equitable Servitude	Contaminated Soil Disturbance Notification Form	Notice of Environmental Contamination	Community and Contractor Awareness
BC R-3809-015A0-0130	Thicket Court Asbestos Pipe			•	•
BI R-3809-015D0-02700	Private Property			•	•
BK R-3809-015D0-01900	Private Property	•	•		•
BL, MBK-F, and Part of AI R-3809-015D0-03900	Private Property	•	•		•
BM R-3809-015A0-00307	Private Property	•	•		•
BO R-3809-015A0-01600	Private Property	•	•		•
BP R-3809-02200-00100	Private Property	•	•		•
BQ R-3809-02200-00801	Private Property				
BR R-3809-015B0-00101	Private Property	•	•		•
BR R-3809-015A0-00303	Private Property	•	•		•
C R-3809-015C0-00300	Private Property	•	•		•
Part of C, E, and F R-3809-015C0-00700 R-3809-015B0-00300	Private Property	•	•		•
D R-3809-015C0-00400	Private Property	•	•		•
E R-3809-015C0-00200	Private Property	•	•		•
F R-3809-015B0-00500	Private Property	•	•		•
G R-3809-015B0-00400	Private Property	•	•		•
H - Parcel 1 R-3809-015B0-00201	Private Property	•	•		•
H - Parcel 2 R-3809-015B0-00200	Private Property	•	•		•
Hunters Ridge Road	Klamath County Right-of-Way		•		•
M R-3809-015D0-00800	Private Property	•	•		•

Parcels (Tax Lot #)	Instrument Implementation Area	Easement and Equitable Servitude	Contaminated Soil Disturbance Notification Form	Notice of Environmental Contamination	Community and Contractor Awareness
MBK-A R-3809-015D0-03000	Private Property	•	•		•
MBK-B R-3809-015D0-03100	Private Property	•	•		•
MBK-C R-3809-015D0-03200	Private Property	•	•		•
MBK-G R-3809-015A0-00304	Private Property	•	•		•
Memorial Park Repository R-3809-015A0-01700 - MBK-D and L R-3809-015D0-00500	Onsite Repository	•	•		•
N R-3809-015D0-00700	Private Property	•	•		•
North Ridge Drive	Klamath County Right-of-Way		•		•
O R-3809-015D0-00600	Private Property	•	•		•
Old Fort Road	Klamath County Right-of-Way		•		•
P R-3809-015D0-02900	Private Property	•	•		•
Q R-3809-015D0-03300	Private Property	•	•		•
R R-3809-015D0-03301	Private Property	•	•		•
S R-3809-015D0-03302	Private Property	•	•		•
Scott Valley Drive	Klamath County Right-of-Way		•		•
Swimming Pool Repository - AG, AL, MBK-E, Part of AI R-3809-015D0-01501	Onsite Repository	•	•		•
Common Area (Relocated Memorial Park) R-3809-015A0-01700	Common Area	•	•		•
Thicket Court	Private Property				•
W R-3809-015D0-03303	Private Property	•	•		•

Parcels (Tax Lot #)	Instrument Implementation Area	Easement and Equitable Servitude	Contaminated Soil Disturbance Notification Form	Notice of Environmental Contamination	Community and Contractor Awareness
WWTP R-3809-015D0-03320	Private Property	•	•		•
X R-3809-015D0-03304	Private Property	•	•		•
Y R-3809-015D0-03305	Private Property	•	•		•
Z R-3809-015D0-03306	Private Property	•	•		•

APPENDIX E – INTERVIEW FORMS

NORTH RIDGE ESTATES SUPERFUND SITE SUPERFUND SITE FIVE-YEAR REVIEW INTERVIEW FORM	
Site Name: North Ridge Estates Superfund Site	
EPA ID: ORN001002476	
Interviewer name: De	Interviewer affiliation:
Subject name: (b) (6)	Subject affiliation: Homeowner
Subject contact information: (b) (6)	
Interview date: 2/2/21	Interview time:
Interview location: K falls	
Interview format (circle one): In Person Phone Mail <u>Email</u> Other:	
Interview category: Resident	

1. Are you aware asbestos contamination remains present throughout the neighborhood beneath the various protective caps (i.e. 2 feet of soil, asphalt, liners, concrete pads, boulders, etc.)?
yes
2. What is your overall impression of the project, including cleanup, maintenance and reuse activities (as appropriate)? *No complaints*
3. Are you aware deed restrictions recorded with Klamath County on your property?
 - a) Do you have a copy of the deed restrictions, titled Easement and Equitable Servitude?
 - b) Have you read and familiarized yourself with the conditions listed in the deed restriction?
 - c) Do you know what portions of your property are restricted by the deed restriction?
yes
4. Have you noticed any issues with the soil cap, including unsanctioned digging or severe erosion below 2ft? *No. There are tire tracks from someone driving on our property that are relatively deep.*
5. Has EPA and the State kept the neighborhood informed of activities in the neighborhood? How can EPA best communicate site-related information in the future (e.g. phone, email, mail, etc.)? *yes, email or phone*
6. If you want to dig below 2 feet on your property do you know the process to complete that work without risking exposure to asbestos contaminated soil? Do you know who to contact at DEQ if you have questions or plan to dig below 2 feet. *yes, unless that person has changed.*
7. Do you have any comments, suggestions or recommendations regarding any aspects of the site?

NORTH RIDGE ESTATES SUPERFUND SITE SUPERFUND SITE FIVE-YEAR REVIEW INTERVIEW FORM	
Site Name: North Ridge Estates Superfund Site	
EPA ID: ORN001002476	
Interviewer name: <i>RYAN Burdack</i>	Interviewer affiliation: .
Subject name: (b) (6)	Subject affiliation: <i>owner</i>
Subject contact information:	
Interview date: <i>Jan. 27 2021</i>	Interview time:
Interview location: <i>office</i>	
Interview format (circle one): In Person Phone Mail <u>Email</u> Other:	
Interview category: Resident	

- Are you aware asbestos contamination remains present throughout the neighborhood beneath the various protective caps (i.e. 2 feet of soil, asphalt, liners, concrete pads, boulders, etc.)?
yes.
- What is your overall impression of the project, including cleanup, maintenance and reuse activities (as appropriate)? *Good.*
- Are you aware deed restrictions recorded with Klamath County on your property? *- No*
 - Do you have a copy of the deed restrictions, titled Easement and Equitable Servitude?
 - Have you read and familiarized yourself with the conditions listed in the deed restriction? *- No*
 - Do you know what portions of your property are restricted by the deed restriction? *- No*
- Have you noticed any issues with the soil cap, including unsanctioned digging or severe erosion below 2ft? *No*
- Has EPA and the State kept the neighborhood informed of activities in the neighborhood? *yes*
How can EPA best communicate site-related information in the future (e.g. phone, email, mail, etc.)?
- If you want to dig below 2 feet on your property do you know the process to complete that work without risking exposure to asbestos contaminated soil? Do you know who to contact at DEQ if you have questions or plan to dig below 2 feet. *No*

- Do you have any comments, suggestions or recommendations regarding any aspects of the site?

IF Large portions of the property is now not usable due to contamination, (restrictions) who is responsible for that loss?

APPENDIX F – SITE INSPECTION CHECKLIST

FIVE-YEAR REVIEW SITE INSPECTION CHECKLIST			
I. SITE INFORMATION			
Site Name: North Ridge Estates		Date of Inspection: <u>9/30/2020</u>	
Location and Region: Klamath Falls, OR		EPA ID: ORN001002476	
Agency, Office or Company Leading the Five-Year Review: <u>EPA</u>		Weather/Temperature: <u>80°F/clear</u>	
Remedy Includes: (Check all that apply) <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input checked="" type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other: _____ </div> <div style="width: 50%;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls </div> </div>			
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached			
II. INTERVIEWS (check all that apply)			
1. O&M Site Manager <u>Katie Daugherty – ODEQ</u> <u>Project Manager</u> <u>9/30/2020</u> <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> <p>Interviewed <input checked="" type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone: _____</p> <p>Problems, suggestions <input checked="" type="checkbox"/> Report attached:</p> <ul style="list-style-type: none"> - APEX Draft O&M Inspection Report 9/28/20 - Parcel O – Notification and Summary of Issue (9.23.20 email) - Summary of Site Walk (9.30.email) - NRE Veg Walk 20200930 Area Delineations 			
2. O&M Staff <u>NA</u> _____ _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> <p>Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone: _____</p> <p>Problems/suggestions <input type="checkbox"/> Report attached: _____</p>			
3. Local Regulatory Authorities and Response Agencies (i.e., state and tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices). Fill in all that apply. <div style="margin-top: 10px;"> Agency _____ Contact _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date Phone No. </div> Problems/suggestions <input type="checkbox"/> Report attached: _____ </div> <div style="margin-top: 10px;"> Agency _____ Contact _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date Phone No. </div> Problems/suggestions <input type="checkbox"/> Report attached: _____ </div> <div style="margin-top: 10px;"> Agency _____ Contact _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date Phone No. </div> Problems/suggestions <input type="checkbox"/> Report attached: _____ </div> <div style="margin-top: 10px;"> Agency _____ Contact _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date Phone No. </div> Problems/suggestions <input type="checkbox"/> Report attached: _____ </div>			

Name _____ Problems/suggestions <input type="checkbox"/> Report attached: _____ Agency _____ Contact _____ Name _____	Title _____ Title _____ Problems/suggestions <input type="checkbox"/> Report attached: _____	Date _____ Date _____	Phone No. _____ Phone No. _____																
4. Other Interviews (optional) <input type="checkbox"/> Report attached: _____																			
III. ONSITE DOCUMENTS AND RECORDS VERIFIED (check all that apply)																			
1. O&M Documents <table style="width: 100%; border: none;"> <tr> <td><input checked="" type="checkbox"/> O&M manual</td> <td><input checked="" type="checkbox"/> Readily available</td> <td><input checked="" type="checkbox"/> Up to date</td> <td><input type="checkbox"/> N/A</td> </tr> <tr> <td><input checked="" type="checkbox"/> As-built drawings</td> <td><input checked="" type="checkbox"/> Readily available</td> <td><input checked="" type="checkbox"/> Up to date</td> <td><input type="checkbox"/> N/A</td> </tr> <tr> <td><input type="checkbox"/> Maintenance logs</td> <td><input type="checkbox"/> Readily available</td> <td><input type="checkbox"/> Up to date</td> <td><input checked="" type="checkbox"/> N/A</td> </tr> </table> Remarks: <u>Site has not moved to O&M (anticipated spring, 2021).</u>				<input checked="" type="checkbox"/> O&M manual	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> As-built drawings	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A	<input type="checkbox"/> Maintenance logs	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A				
<input checked="" type="checkbox"/> O&M manual	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A																
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<input type="checkbox"/> Maintenance logs	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A																
2. Site-Specific Health and Safety Plan <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Readily available</td> <td><input type="checkbox"/> Up to date</td> <td><input checked="" type="checkbox"/> N/A</td> </tr> <tr> <td><input type="checkbox"/> Contingency plan/emergency response plan</td> <td><input checked="" type="checkbox"/> Readily available</td> <td><input type="checkbox"/> Up to date <input type="checkbox"/> N/A</td> </tr> </table> Remarks: <u>No on-site personnel/work to take place during O&M. Contingency/emergency response protocol is included in the Oregon North Ridge Estates O&M Plan.</u>				<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Contingency plan/emergency response plan	<input checked="" type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> N/A										
<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A																	
<input type="checkbox"/> Contingency plan/emergency response plan	<input checked="" type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> N/A																	
3. O&M and OSHA Training Records <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Readily available</td> <td><input type="checkbox"/> Up to date</td> <td><input checked="" type="checkbox"/> N/A</td> </tr> </table> Remarks: _____				<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A													
<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A																	
4. Permits and Service Agreements <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Air discharge permit</td> <td><input type="checkbox"/> Readily available</td> <td><input type="checkbox"/> Up to date</td> <td><input checked="" type="checkbox"/> N/A</td> </tr> <tr> <td><input type="checkbox"/> Effluent discharge</td> <td><input type="checkbox"/> Readily available</td> <td><input type="checkbox"/> Up to date</td> <td><input checked="" type="checkbox"/> N/A</td> </tr> <tr> <td><input type="checkbox"/> Waste disposal, POTW</td> <td><input type="checkbox"/> Readily available</td> <td><input type="checkbox"/> Up to date</td> <td><input checked="" type="checkbox"/> N/A</td> </tr> <tr> <td><input type="checkbox"/> Other permits: _____</td> <td><input type="checkbox"/> Readily available</td> <td><input type="checkbox"/> Up to date</td> <td><input checked="" type="checkbox"/> N/A</td> </tr> </table> Remarks: _____				<input type="checkbox"/> Air discharge permit	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Effluent discharge	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Waste disposal, POTW	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Other permits: _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
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5. Gas Generation Records <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Readily available</td> <td><input type="checkbox"/> Up to date</td> <td><input checked="" type="checkbox"/> N/A</td> </tr> </table> Remarks: _____				<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A													
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6. Settlement Monument Records <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Readily available</td> <td><input type="checkbox"/> Up to date</td> <td><input checked="" type="checkbox"/> N/A</td> </tr> </table> Remarks: _____				<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A													
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7. Groundwater Monitoring Records <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Readily available</td> <td><input type="checkbox"/> Up to date</td> <td><input checked="" type="checkbox"/> N/A</td> </tr> </table> Remarks: _____				<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A													
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8. Leachate Extraction Records <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Readily available</td> <td><input type="checkbox"/> Up to date</td> <td><input checked="" type="checkbox"/> N/A</td> </tr> </table> Remarks: _____				<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A													
<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A																	

9.	Discharge Compliance Records	<input type="checkbox"/> Air	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A																																								
		<input type="checkbox"/> Water (effluent)	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A																																								
Remarks: _____																																													
10.	Daily Access/Security Logs	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A																																									
Remarks: _____																																													
IV. O&M COSTS																																													
1.	O&M Organization	<input checked="" type="checkbox"/> State in-house <input type="checkbox"/> Contractor for state <input type="checkbox"/> PRP in-house <input type="checkbox"/> Contractor for PRP <input type="checkbox"/> Federal facility in-house <input type="checkbox"/> Contractor for Federal facility <input type="checkbox"/> _____																																											
2.	O&M Cost Records	<input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input type="checkbox"/> Funding mechanism/agreement in place <input checked="" type="checkbox"/> Unavailable Original O&M cost estimate: _____ <input type="checkbox"/> Breakdown attached <div style="text-align: center;">Total annual cost by year for review period if available</div> <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">From: _____</td> <td style="width: 25%;">To: _____</td> <td style="width: 25%;">_____</td> <td style="width: 25%;"><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> <tr> <td>From: _____</td> <td>To: _____</td> <td>_____</td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> <tr> <td>From: _____</td> <td>To: _____</td> <td>_____</td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> <tr> <td>From: _____</td> <td>To: _____</td> <td>_____</td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> <tr> <td>From: _____</td> <td>To: _____</td> <td>_____</td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> </table>				From: _____	To: _____	_____	<input type="checkbox"/> Breakdown attached	Date	Date	Total cost		From: _____	To: _____	_____	<input type="checkbox"/> Breakdown attached	Date	Date	Total cost		From: _____	To: _____	_____	<input type="checkbox"/> Breakdown attached	Date	Date	Total cost		From: _____	To: _____	_____	<input type="checkbox"/> Breakdown attached	Date	Date	Total cost		From: _____	To: _____	_____	<input type="checkbox"/> Breakdown attached	Date	Date	Total cost	
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3.	Unanticipated or Unusually High O&M Costs during Review Period Describe costs and reasons: <u>N/A - Site has not entered into O&M.</u>																																												
V. ACCESS AND INSTITUTIONAL CONTROLS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A																																													
A. Fencing																																													
1.	Fencing Damaged	<input checked="" type="checkbox"/> Location shown on site map <input type="checkbox"/> Gates secured <input type="checkbox"/> N/A Remarks: <u>Repository fencing damaged in two sections. EA will repair before the Site moves into O&M.</u>																																											
B. Other Access Restrictions																																													
1.	Signs and Other Security Measures	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> N/A Remarks: _____																																											

C. Institutional Controls (ICs)														
1. Implementation and Enforcement Site conditions imply ICs not properly implemented <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Site conditions imply ICs not being fully enforced <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A Type of monitoring (e.g., self-reporting, drive by): <u>ICs evaluated during State's annual O&M evaluation.</u> <u>Violation of ICs at Parcel O were reported to the State by private resident.</u> Frequency: <u>Annual</u> Responsible party/agency: <u>State</u> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">Contact</td> <td style="width: 25%;"><u>Kathleen Daugherty</u></td> <td style="width: 20%;">Project Manager</td> <td style="width: 20%;"><u>09/22/2020</u></td> <td style="width: 15%;"><u>503-229-6748</u></td> </tr> <tr> <td></td> <td style="text-align: center;">Name</td> <td style="text-align: center;">Title</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Phone no.</td> </tr> </table> Reporting is up to date <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Reports are verified by the lead agency <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Specific requirements in deed or decision documents have been met <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Violations have been reported <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Other problems or suggestions: <input checked="" type="checkbox"/> Report attached					Contact	<u>Kathleen Daugherty</u>	Project Manager	<u>09/22/2020</u>	<u>503-229-6748</u>		Name	Title	Date	Phone no.
Contact	<u>Kathleen Daugherty</u>	Project Manager	<u>09/22/2020</u>	<u>503-229-6748</u>										
	Name	Title	Date	Phone no.										
2. Adequacy <input checked="" type="checkbox"/> ICs are adequate <input type="checkbox"/> ICs are inadequate <input type="checkbox"/> N/A Remarks: _____														
D. General														
1. Vandalism/Trespassing <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No vandalism evident Remarks: _____														
2. Land Use Changes On Site <input type="checkbox"/> N/A Remarks: <u>Pond installation on Parcel O currently pending resolution.</u>														
3. Land Use Changes Off Site <input checked="" type="checkbox"/> N/A Remarks: _____														
VI. GENERAL SITE CONDITIONS														
A. Roads <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A														
1. Roads Damaged <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Roads adequate <input checked="" type="checkbox"/> N/A Remarks: _____														
B. Other Site Conditions														
Remarks: _____														
VII. LANDFILL COVERS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A														
A. Landfill Surface														
1. Settlement (low spots) <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Area extent: _____ Depth: _____ Remarks: _____														

2.	Cracks	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Cracking not evident
	Lengths: _____	Widths: _____	Depths: _____
	Remarks: _____		
3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Area extent: _____		Depth: _____
	Remarks: _____		
4.	Holes	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Holes not evident
	Area extent: _____		Depth: _____
	Remarks: _____		
5.	Vegetative Cover	<input checked="" type="checkbox"/> Grass	<input type="checkbox"/> Cover properly established
	<input type="checkbox"/> No signs of stress	<input type="checkbox"/> Trees/shrubs (indicate size and locations on a diagram)	
	Remarks: <u>Vegation issues noted at Memorial Park/Parcel AG.</u>		
6.	Alternative Cover (e.g., armored rock, concrete)	<input checked="" type="checkbox"/> N/A	
	Remarks: _____		
7.	Bulges	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Bulges not evident
	Area extent: _____		Height: _____
	Remarks: _____		
8.	Wet Areas/Water Damage	<input type="checkbox"/> Wet areas/water damage not evident	
	<input type="checkbox"/> Wet areas	<input type="checkbox"/> Location shown on site map	Area extent: _____
	<input type="checkbox"/> Ponding	<input type="checkbox"/> Location shown on site map	Area extent: _____
	<input type="checkbox"/> Seeps	<input type="checkbox"/> Location shown on site map	Area extent: _____
	<input type="checkbox"/> Soft subgrade	<input type="checkbox"/> Location shown on site map	Area extent: _____
	Remarks: _____		
9.	Slope Instability	<input type="checkbox"/> Slides	<input type="checkbox"/> Location shown on site map
	<input checked="" type="checkbox"/> No evidence of slope instability		
	Area extent: _____		
	Remarks: _____		
B. Benches <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)			
1.	Flows Bypass Bench	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> N/A or okay
	Remarks: _____		
2.	Bench Breached	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> N/A or okay
	Remarks: _____		
3.	Bench Overtopped	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> N/A or okay
	Remarks: _____		

C. Letdown Channels <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
(Channel lined with erosion control mats, riprap, grout bags or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)			
1.	Settlement (Low spots)	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of settlement Depth: _____
	Area extent: _____		
	Remarks: _____		
2.	Material Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of degradation Area extent: _____
	Material type: _____		
	Remarks: _____		
3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of erosion Depth: _____
	Area extent: _____		
	Remarks: _____		
4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting Depth: _____
	Area extent: _____		
	Remarks: _____		
5.	Obstructions	Type: _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Area extent: _____	
	Size: _____		
	Remarks: _____		
6.	Excessive Vegetative Growth	Type: _____	
	<input type="checkbox"/> No evidence of excessive growth		
	<input type="checkbox"/> Vegetation in channels does not obstruct flow		
	<input type="checkbox"/> Location shown on site map	Area extent: _____	
	Remarks: _____		
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs maintenance	<input type="checkbox"/> Good condition
			<input type="checkbox"/> N/A
	Remarks: _____		
2.	Gas Monitoring Probes	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs maintenance	<input type="checkbox"/> Good condition
			<input type="checkbox"/> N/A
	Remarks: _____		

3.	Monitoring Wells (within surface area of landfill)	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs maintenance	<input type="checkbox"/> N/A
	Remarks: _____				
4.	Extraction Wells Leachate	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs maintenance	<input type="checkbox"/> N/A
	Remarks: _____				
5.	Settlement Monuments	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed	<input type="checkbox"/> N/A	
	Remarks: _____				
E. Gas Collection and Treatment		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A		
1.	Gas Treatment Facilities	<input type="checkbox"/> Flaring	<input type="checkbox"/> Thermal destruction	<input type="checkbox"/> Collection for reuse	
		<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs maintenance		
	Remarks: _____				
2.	Gas Collection Wells, Manifolds and Piping	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs maintenance		
	Remarks: _____				
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs maintenance	<input type="checkbox"/> N/A	
	Remarks: _____				
F. Cover Drainage Layer		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A		
1.	Outlet Pipes Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A		
	Remarks: _____				
2.	Outlet Rock Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A		
	Remarks: _____				
G. Detention/Sedimentation Ponds		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A		
1.	Siltation	Area extent: _____	Depth: _____	<input type="checkbox"/> N/A	
	<input type="checkbox"/> Siltation not evident				
	Remarks: _____				
2.	Erosion	Area extent: _____	Depth: _____		
	<input type="checkbox"/> Erosion not evident				
	Remarks: _____				
3.	Outlet Works	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A		
	Remarks: _____				

4.	Dam	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks: _____			
H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
Horizontal displacement: _____		Vertical displacement: _____	
Rotational displacement: _____			
Remarks: _____			
2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
Remarks: _____			
I. Perimeter Ditches/Off-Site Discharge		<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
Area extent: _____		Depth: _____	
Remarks: <u>Sediment buildup observed in drainage culverts sitewide. State to discuss cleaning with County.</u>			
2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
<input type="checkbox"/> Vegetation does not impede flow			
Area extent: _____		Type: _____	
Remarks: _____			
3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
Area extent: _____		Depth: _____	
Remarks: _____			
4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks: _____			
VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
Area extent: _____		Depth: _____	
Remarks: _____			
2.	Performance Monitoring	Type of monitoring: _____	
<input type="checkbox"/> Performance not monitored			
Frequency: _____		<input type="checkbox"/> Evidence of breaching	
Head differential: _____			
Remarks: _____			

IX. GROUNDWATER/SURFACE WATER REMEDIES <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
A. Groundwater Extraction Wells, Pumps and Pipelines <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Pumps, Wellhead Plumbing and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs maintenance <input type="checkbox"/> N/A Remarks: _____
2.	Extraction System Pipelines, Valves, Valve Boxes and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs maintenance Remarks: _____
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks: _____
B. Surface Water Collection Structures, Pumps and Pipelines <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Collection Structures, Pumps and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> Needs maintenance Remarks: _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs maintenance Remarks: _____
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks: _____
C. Treatment System <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Treatment Train (check components that apply) <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div><input type="checkbox"/> Metals removal</div> <div><input type="checkbox"/> Oil/water separation</div> <div><input type="checkbox"/> Bioremediation</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div><input type="checkbox"/> Air stripping</div> <div><input type="checkbox"/> Carbon adsorbers</div> </div> <div style="margin-top: 5px;"><input type="checkbox"/> Filters: _____</div> <div style="margin-top: 5px;"><input type="checkbox"/> Additive (e.g., chelation agent, flocculent): _____</div> <div style="margin-top: 5px;"><input type="checkbox"/> Others: _____</div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div><input type="checkbox"/> Good condition</div> <div><input type="checkbox"/> Needs maintenance</div> </div> <div style="margin-top: 5px;"><input type="checkbox"/> Sampling ports properly marked and functional</div> <div style="margin-top: 5px;"><input type="checkbox"/> Sampling/maintenance log displayed and up to date</div> <div style="margin-top: 5px;"><input type="checkbox"/> Equipment properly identified</div> <div style="margin-top: 5px;"><input type="checkbox"/> Quantity of groundwater treated annually: _____</div> <div style="margin-top: 5px;"><input type="checkbox"/> Quantity of surface water treated annually: _____</div> <div style="margin-top: 5px;">Remarks: _____</div>

2.	Electrical Enclosures and Panels (properly rated and functional) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs maintenance Remarks: _____
3.	Tanks, Vaults, Storage Vessels <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs maintenance Remarks: _____
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs maintenance Remarks: _____
5.	Treatment Building(s) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair <input type="checkbox"/> Chemicals and equipment properly stored Remarks: _____
6.	Monitoring Wells (pump and treatment remedy) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs maintenance <input type="checkbox"/> N/A Remarks: _____
D. Monitoring Data <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Monitoring Data <input type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality
2.	Monitoring Data Suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining
E. Monitored Natural Attenuation <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Monitoring Wells (natural attenuation remedy) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs maintenance <input type="checkbox"/> N/A Remarks: _____
X. OTHER REMEDIES	
If there are remedies applied at the site and not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.	
XI. OVERALL OBSERVATIONS	
A. Implementation of the Remedy Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is designed to accomplish (e.g., to contain contaminant plume, minimize infiltration and gas emissions). <u>The OU1 remedial action objectives are outlined in Section 8 of the North Ridge Estates Operable Unit 1 Record of Decision (2011). These include actions:</u> 1. Prevent inhalation exposures by humans to asbestos fibers in soil above levels that pose an unacceptable risk for residential use. 2. Prevent the migration of asbestos contamination by natural and man-made transport mechanisms from source locations to unimpacted locations and media.	

<p>3. Prevent the potential for human inhalation and incidental ingestion exposure to soil in the vicinity of the former power plant contaminated with arsenic concentrations above levels that pose an unacceptable risk to human health.</p> <p>These RAOs are achieved in the ROD through the excavation and on-site storage of contaminated soil and backfill with imported clean material. Contaminated material is stored on site in two separate engineered repositories. Clean fill present on the rest of the Site is intended to serve as a protective cap inhibiting exposure to potentially-contaminated soil beneath the excavation depth.</p> <p>The protective cap and on-site repositories are functioning as intended. Violation of the property ICs were observed on Parcel O. In coordination with the State and property owner, violation was deemed to be a result of confusion on the notification process that property owners must adhere to before digging beneath the protective cap (greater than 2 feet below ground surface). As a result, the State, with input by EPA, has developed new informational fact sheet to distribute to residents occupying the Site.</p> <p>In addition to the Parcel IC violation, EPA noted a part of parcel AG located within the Memorial Park where vegetation had not been established. Vegetative growth is also impeded above the Memorial Park Repository where surplus woodchips from remedial construction were distributed. Vegetation is an important element of the remedy and is needed to prevent erosion of the protective cap. Both of these issues are pending resolution and will be addressed prior to moving the Site into O&M.</p>
<p>B. Adequacy of O&M</p> <p>Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.</p> <p>A draft O&M evaluation report was completed by APEX on September 28, 2020, on behalf of ODEQ. While the Site has not moved into O&M, this evaluation is consistent with the Final OU1 O&M Plan developed by the State, which calls for an annual inspection of the Site. This first evaluation, while not required prior to O&M, was conducted to test the O&M process and to help focus the sitewide inspection that took place on September 30, 2020.</p>
<p>C. Early Indicators of Potential Remedy Problems</p> <p>Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.</p> <p>The primary indication of potential remedy problems is the discovery of on-site excavation on Parcel O by the current resident. While this indicates potential issues with the ICs and excavation approval requirements, this violation was promptly reported to the State and that the property owner partially followed the excavation and State notification requirements; this indicates that this violation was the result of the resident misinterpreting the IC language and State instructions rather than intentional or wanton violation. To address this in the future, the State has developed an information fact sheet to distribute among residents to better clarify IC requirements. EPA has reviewed and provided approval of the draft fact sheet as of October 2020.</p>
<p>D. Opportunities for Optimization</p> <p>Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. <u>NA.</u></p>

APPENDIX G – SITE INSPECTION PHOTOS



Photo of the Site from Parcel H facing south



Swimming Pool Repository mulch area



Memorial Park fence



Violation of property institutional controls at Parcel O

APPENDIX H – SUPPORTING DOCUMENTATION

From: [Meyer, Linda](#)
To: [Tan, Robert](#); [Leffers, Kristin](#); [Whobie, Julie](#)
Subject: NRE breach of cap - FW: Parcel O recap
Date: Wednesday, September 23, 2020 11:59:29 AM
Attachments: [Parcel-O-excavated-pond-soil-09-23-2020.jpg](#)
[Parcel-O-pond-09-23-2020.jpg](#)
[Pages from O AS-BJLT.pdf](#)

Robert/Kris/Julie – here is a summary of the issues from Katie. Since Robert is going out to the site next week and EA will be doing the final O&M inspection – the plan is to use that opportunity to grab some samples. Julie – we can talk though sampling options but EA should be able to at least grab samples. Kris – let's discuss if there is any additional information that we would want to collect, or if you think we should handle this different from Katie's recommendation recognizing that the site visit is next week. Thanks!

From: DAUGHERTY Katie <Katie.J.DAUGHERTY@state.or.us>
Sent: Wednesday, September 23, 2020 9:41 AM
To: Meyer, Linda <Meyer.Linda@epa.gov>
Subject: Parcel O recap

Hi Linda,

Here is a recap of conversations with (b) (6) owners of Parcel O.

8/7/2020 I spoke to (b) (6) about various things at a general level. This included the need to have an abatement contractor present for any ground disturbing actions below 2 feet. I did not specifically mention the need to fill out the excavation notification form and we did not talk about specific projects or pending plans for a pond.

9/17/2020 Sarah Babcock (EA) received an email from neighbor with concerns about the owners of Parcel O digging a giant pond, going below 2 feet and releasing asbestos into the neighborhood.

9/17/20 I reached out to (b) (6) by email when I realized I did not have their phone #

9/18/20 Got (b) (6) phone number from neighbor. Connected with (b) (6) and asked him if excavation was underway. He said it was done. I indicated that they had not received approval from me to perform the dig. I indicated that digging below 2 feet had violated the EES and could have created a situation that could have brought contamination to the surface. It could also have liability and financial repercussions. (b) (6) indicated the excavated soil was still on-site and was used to fill in low spots that have ponded water during winter. I asked him to keep the soil and excavation wet while the NRE project team discuss.

(b) (6) called few minutes after I got off the phone with (b) (6). She explained that she thought they had followed all the correct steps. She had talked to me generally but not

From: [Babcock, Sarah](#)
To: [Meyer, Linda](#)
Cc: [Tan, Robert](#); [DAUGHERTY, Katie](#); [Winkle, Derek](#); [Hurley, William](#); [Bowman, Matthew](#)
Subject: NRE - Summary of Site Walk
Date: Wednesday, September 30, 2020 6:05:14 PM
Attachments: [image001.png](#)

Hi Linda –

We walked through the site today looking at items from the watchlist from last year and at the O&M inspection report from Apex. Here are the overall items:

1. North Wind will be looking at reseeding sparse areas at the new Memorial Park and MBK-A/B (lower part where the last haul road was).
2. The mulched area at the top of the Swimming Pool Repository has not deteriorated, but also has not grown any plants. North Wind will consider a solution there.
3. As part of the O&M, EA will do minor fencing repair on the repositories and remove the cages/stakes around the trees in all the common areas (I counted 68 total).
4. There were several O&M findings on the private property that Katie is going to inform the owners of to remedy.
5. The county should be dealing with the culverts and Katie will inform them of that.

Parcel O discussion went well – I'll upload my pictures to the Sharepoint and Robert/Katie can add theirs. The plan is to take the soil off-site regardless. The sampling Susan/Curtis will do tomorrow will be strictly for waste characterization. We're going to pull one 5-point composite per pile, three around the excavation itself, and three from the soil used to fill in low spots (over by their AC unit). Probably 12-15 samples total. Robert will be on-site tomorrow to direct as needed.

Let me know if you have any questions. Robert/Katie/Derek, please chime in with any edits to the above.

Thanks - Sarah

Sarah Babcock, PE, PMP

Program Manager

EA Engineering, Science, and Technology, Inc., PBC

7995 E. Prentice Ave, Suite 206E

Greenwood Village, CO 80111

Direct: 303-590-9141

Cell: 303-929-8734



Be sustainable, think about environmental responsibilities before printing.

APPENDIX I – PRESS NOTICE



Cleanup Progress to be Reviewed for North Ridge Estates Superfund Site Klamath Falls, Oregon.

We Want to Hear from You

As part of the five-year review process at the North Ridge Estates Superfund Site in Klamath Falls, Oregon, we like to keep the community informed about site activities. We also would like to hear from you if you have any information or observations about the Site that can help our review team. As part of the review, EPA will be interviewing stakeholders and community members who have concerns, questions or information about the Site. If you would like to participate in an interview or have any comments or questions, please contact EPA project manager Robert Tan by phone or email.

Contact:

Robert Tan

EPA Remedial Project Manager

((206) 553-2580

Tan.robert@epa.gov

For More Information

You can find more information about the Site on EPA's website:

<https://www.epa.gov/superfund/north-ridge-estates>.

What and Why

EPA will be reviewing the status of ongoing environmental cleanup activities at the Site. EPA must review Superfund sites every five years when contaminants remain on site or when cleanup activities are underway. The purpose of this review is to ensure that response actions are progressing as planned to achieve the requirement to protect human health and the environment.

Background

The site is contaminated with asbestos as a result of the improper demolition of approximately eighty 1940s-era military barracks buildings. Asbestos-containing materials and soil were removed from the old military barracks site during three seasons of cleanup from 2016-2018. Beginning in 2016, EPA and ODEQ excavated and removed about 360,000 cubic yards of asbestos-containing materials and contaminated soils across the 144-acre site. The cleanup has returned the site to productive use as a residential neighborhood, protecting current and future residents and the Klamath Falls community from harmful asbestos contamination.

TDD and/or TTY users may call the Federal Relay Service at 800-877-8339. Then please give the operator number (206) 553-0603 to reach EPA project manager Robert Tan.

APPENDIX J – EASEMENT & EQUITABLE SERVITUDES

2019-008899

Klamath County, Oregon



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08/06/2019 01:17:38 PM

Fee: \$177.00

EASEMENT AND EQUITABLE SERVITUDES

Pursuant to ORS 205.244(2)

Rerecorded at the request of Oregon Department of Environmental Quality to correct the description of the property affected in RECITALS Paragraph A previously recorded in Vol. 2019-007032.



00242553201900070320150158

06/21/2019 12:19:22 PM

Fee: \$152.00

*Space above this line for Recorder's use.****After recording, return original to:*****Grantee**

Oregon DEQ
 700 NE Multnomah Ave., Suite 600
 Portland, OR 97232
 Attention: Katie Daugherty

Return a certified copy to:**Grantor**

North Ridge Estates Receivership LLC
 606 Columbia St NW, Suite 212
 Olympia, WA 98501
 Attention: Dan Silver

EASEMENT AND EQUITABLE SERVITUDES

This grant of Easement and acceptance of Equitable Servitudes ("EES") is made on 6/19/19 between North Ridge Estates Receivership LLC ("Grantor" or "Owner") and the State of Oregon, acting by and through the Oregon Department of Environmental Quality ("DEQ" or "Grantee").

RECITALS

A. Grantor is the owner of certain real property located on North Ridge Dr. near Old Fort Rd. in Klamath Falls, Klamath County, Oregon in Klamath County Tax Map 38S9E15D, Tax Lot 1501 (the "**Property**") the location of which is more particularly described in Exhibit A to this EES. The Property is referenced under the name North Ridge Estates (NRE) Site, Operable Unit No. 1 (OU1), ECSI No. 2335 and under the name NRE Memorial Park Repository (Parcels L & MBK-D), ECSI No. 5990 in the files of DEQ's Eastern Region office located at 800 SE Emigrant Ave., Suite 330, Pendleton, Oregon, and telephone 541-276-4063.

B. A detailed description of the residual risks present at the Property is presented in the "North Ridge Estates Site, Klamath County, Oregon Risk Investigation Report" prepared by CDM Federal Programs Corporation for the U.S. Environmental Protection Agency (EPA) and dated January 18, 2010. This report is available for review at the DEQ office referred above and through EPA under CERCLIS Identification Number ORD 001002476. The NRE OU1 Superfund file may also be viewed at the EPA Region 10 Records Center located at 1200 Sixth Ave., Suite 900, Seattle, Washington, and telephone 206-553-4494.

C. The Property is located within the NRE Site OU1, which is a part of a National Priority List (NPL) site. The NPL site consists of over 50 primarily residential or vacant

properties. The obligations of the Grantor under this EES run to the Property only and not to any other portion of the NPL site. The NPL site boundaries are shown on the figure included as Exhibit B. The Property is identified as Parcels L and MBK-D on the figure.

D. EPA issued the Record of Decision, NRE Operable Unit 1, dated September 2011 (ROD), for the NRE site OU1, which includes the Property. The Director of the DEQ concurred with the selected remedy in a letter dated September 16, 2011. The remedial action selected requires, among other things: excavation of the majority of surface and subsurface soils contaminated by hazardous substances to a maximum depth of four feet below ground surface; capping of remaining soils on the NRE Site OU1 parcels after soil removal with clean materials; consolidating and placing all excavated contaminated soils or materials in one or more on-site repositories; and applying institutional and engineering controls.

E. DEQ and EPA have entered into an agreement, dated May 19, 2014, titled "Superfund State Contract for North Ridge Estates Site, Operable Unit #1" in which DEQ assures that institutional controls, considered part of operation and maintenance (O&M) of the implemented CERCLA funded remedial actions, will be monitored and retained.

F. Remedial actions were performed on the Property from 2016 to 2018. Remedial actions included the excavation of contaminated soil and materials in areas of the property outside of the footprint of the repository, expansion of a previously existing repository, disposal of contaminated soil and materials into the repository, backfilling and construction of a protective cap, and restoration.

G. The provisions of this EES are intended to protect human health and the environment and to meet the substantive institutional control requirements set forth in the ROD.

H. Nothing in this EES constitutes an admission by Grantor of any liability for the contamination described in the EES.

1. DEFINITIONS

- 1.1 "DEQ" means the Oregon Department of Environmental Quality, and its employees, agents, and authorized representatives. "DEQ" also means any successor or assign of DEQ under the laws of Oregon, including but not limited to any entity or instrumentality of the State of Oregon authorized to perform any of the functions or to exercise any of the powers currently performed or exercised by DEQ.
- 1.2 "Engineering control" has the meaning set forth in Oregon Administrative Rule (OAR) 340-122-0115. The primary engineering control used at NRE OU1 is a protective cap.
- 1.3 "EPA" means the United States Environmental Protection Agency, and its employees, agents, and authorized representatives. "EPA" also means any successor or assign of EPA under the laws of the United States, including but not limited to any entity or instrumentality of the United States authorized to perform any of the functions or to exercise any of the powers currently performed or exercised by EPA.

- 1.4 "Hazardous substance" has the meaning set forth in Oregon Revised Statute (ORS) 465.200.
- 1.5 "Institutional control" has the meaning set forth in OAR 340-122-0115.
- 1.6 "Owner" means any person or entity, including Grantor, who at any time owns, occupies, or acquires any right, title, or interest in or to any portion of the Property or a vendee's interest of record to any portion of the Property, including any successor, heir, assign or holder of title or a vendee's interest of record to any portion of the Property, but excluding any entity or person who holds such interest solely for the security for the payment of an obligation and does not possess or control use of the Property.
- 1.7 "Property" means the real property described in Exhibit A to this EES.
- 1.8 "Remedial Action" has the meaning set forth in ORS 465.200 and OAR 340-122-0115 and Section 101(24) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601(24).

2. GENERAL DECLARATION

2.1 Grantor, grants to DEQ an Easement for access and accepts the Equitable Servitudes described in this instrument and, in so doing, declares that the Property is now subject to and must in future be conveyed, transferred, leased, encumbered, occupied, built upon, or otherwise used or improved, in whole or in part, subject to this EES.

2.2 Each condition and restriction set forth in this EES touches and concerns the Property and the equitable servitudes granted in Section 3 and easement granted in Section 4 below, runs with the land for all purposes, is binding upon all current and future owners of the Property as set forth in this EES, and inures to the benefit of the State of Oregon. Grantor further conveys to DEQ the perpetual right to enforce the conditions and restrictions set forth in this EES.

3. EQUITABLE SERVITUDES (REQUIRED ACTIONS AND RESTRICTIONS ON USE)

3.1 **Engineering Control & Earthwork Restrictions.** The following protective caps are present at the Property: 1) an orange geotextile liner over the footprint of the repository covered by a minimum of a two feet of soil; 2) oversized rock in stormwater channels; and 3) a minimum of a two foot soil cap placed over the remainder of the Property.

Except upon prior written approval from DEQ, Owner may not conduct or allow operations or conditions on the Property or use of the Property that will or likely will penetrate the protective caps or jeopardize the protective caps' function as an engineering control that prevents exposure to contaminated materials.

Owner does not need written approval from DEQ for minor activities performed within the soil cap such as installation of fence posts, plantings, or other such activities that go no deeper than

two feet below the ground surface as long as Owner restores the two-foot protective cap after the activities are completed.

Owner is required to maintain the protective caps present on the Property. This includes ensuring vegetation on the soil cap is maintained to prevent erosion, drainage on the Property is maintained to prevent the soil cap from eroding, asphalt and concrete surfaces are kept in good repair.

Owner shall submit a *North Ridge Estates Earthwork Notification and Reporting Form* (example included as Exhibit C) to DEQ at least 90 days prior to the date any ground disturbing (i.e. grading, trenching, digging) that will alter and/or reduce the thickness of the protective cap or penetrate below the protective cap except for emergencies, system failures, or time-critical repairs. Owner must receive written approval from DEQ before proceeding with activities. DEQ will make good faith efforts to review plans promptly so there are no undue delays. DEQ shall determine if an Oregon-licensed asbestos abatement company is required based on the work to be performed and review of records regarding remedial activities on the Property. If DEQ determines that the work must be performed by an Oregon-licensed company, Owner must utilize an Oregon-licensed asbestos abatement company during any action that may disturb a contaminated area.

Owner shall complete the reporting section of the *North Ridge Estates Earthwork Notification and Reporting Form* and re-submit to DEQ within 45 days of the completion of work.

3.2 Stormwater Conveyance System. Owner shall routinely maintain stormwater features located on the Property to preserve stormwater conveyance capacity. Stormwater features include culverts, surface channels, and other miscellaneous features such as inlet structures. Owner shall not alter, impede, or restrict the flow of stormwater conveyed by these features through the Property.

3.3 Building Restrictions. Structures of any type are prohibited on or within the footprint of the repository.

3.4 Use of the Property. Owner may not occupy or allow other parties to occupy the Property unless the controls listed in this Section 3 are maintained

4. EASEMENT (RIGHT OF ENTRY)

4.1. Owner agrees to provide DEQ and EPA entry upon and inspection of any portion of the Property during reasonable hours and in accordance with Subsections 4.2 and 4.3, for the following:

- (1) To determine whether the requirements of this EES have been or are being complied with;

- (2) To determine whether the provisions of the ROD have or are being complied with;
- (3) To conduct all investigation, removal, and remedial measures and inspections described in the ROD; and
- (4) To conduct all other investigation, removal, and remedial measures and inspections that DEQ or EPA may require in the future at the Property.

Except when necessary to address an imminent threat to human health or the environment, DEQ or EPA will use best efforts to notify the Owner 48 hours before their entry to the Property. DEQ or EPA may enter upon the Property at any time to abate, mitigate, or cure at the expense of the Owner the violation of any condition or restriction contained in this EES, provided written notice of the violation is given to Owner describing what is necessary to correct the violation and Owner fails to cure the violation within the time specified in such notice, which shall be reasonable under the circumstances. Any such entry by DEQ or EPA to evaluate compliance or to abate, mitigate, or cure a violation may not be deemed a trespass, and neither DEQ nor EPA shall be subject to liability to the Owner of the Property for such entry and any action taken to abate, mitigate, or cure a violation.

4.2. Access

A. Owner agrees to allow DEQ, EPA, and their officers, agents, authorized representatives, employees, and contractors to enter the Property for the purpose of performing remedial activities. Such remedial activities at the Property may include but are not limited to:

- (1) Sampling and inspecting air, water, and/or soil at the Property;
- (2) Constructing or excavating soil borings, test pits, and/or excavations at the Property;
- (3) Removing contaminated soils or materials from the Property;
- (4) Temporarily storing equipment, vehicles, tools, and other materials at the Property;
- (5) Temporarily storing wastewaters and related materials and wastes;
- (6) Restoring the surface condition of areas disturbed by remedial activities and repairing any structures or improvements damaged by remedial activities; and
- (7) Photographing portions of the property and structures, objects, and materials at the Property as necessary to facilitate remedial measures.

B. All tools, equipment, and other materials brought upon the Property by or at the direction of DEQ or EPA remain property of DEQ or EPA, respectively, and will be removed by DEQ or EPA upon completion of remedial activities at the Property. DEQ or EPA also will remove any wastes or wastewaters they generated upon completion of the remedial activities.

C. No later than completion of remedial activities at the Property, DEQ or EPA intend to restore the surface condition of areas disturbed by remedial activities, to the maximum extent reasonably practicable, and to the extent permitted by law, to a condition equivalent to the condition existing before remedial activities.

D. DEQ or EPA will coordinate their activities with the Owner to minimize, to the maximum extent reasonably practicable, any impairment of access on the Property due to activities of DEQ or EPA.

E. Before undertaking any remedial activity at the Property, except for emergencies, system failures, or time-critical repairs, DEQ or EPA will use best efforts to provide the Owner at least 48 hours verbal notice of the activity.

F. The Owner, or its authorized representative, may observe DEQ or EPA while DEQ or EPA are undertaking remedial activities at the Property; provided, any observer entering the defined work zone must have health and safety training consistent with the requirements of the applicable health and safety plan.

G. The Owner will not interfere with or otherwise limit any activity conducted at the Property pursuant to and consistent with this EES by DEQ, EPA, or their officers, employees, agents, contractors, or authorized representatives. This obligation also applies to and is binding upon any and all tenants of the Owner at the Property.

4.3. Nothing in this Section 4 is intended to convey a property interest to EPA. Conditions agreed upon by Owner in this Section 4 pertaining to EPA are pursuant to EPA's access and response authority in Section 104 of CERCLA, 42 U.S.C. § 9604.

5. THIRD PARTY BENEFICIARY RIGHTS OF EPA

5.1. EPA shall have the right, but shall not be obligated, to monitor and to enforce, by all means available in law or equity, the terms of this EES as a third party beneficiary of this EES.

5.2. EPA's rights provided in this Section 5 are in addition to, and not in derogation of, all rights of DEQ to enforce the terms of this EES. Nothing in this Section 5 shall be construed to create, either expressly or by implication, the relationship of agency between EPA and DEQ and neither EPA nor DEQ is authorized by this Section 5 to represent or act on behalf of the other in the enforcement of rights granted under this EES.

5.3. Grantor represents that it has notified EPA of EPA's status as a third party beneficiary under Section 5 of this EES.

6. RELEASE OF RESTRICTIONS

6.1. Owner may request release of any or all of the conditions or restrictions contained in this EES by submitting such request to DEQ in writing with evidence that the conditions or restrictions are no longer necessary to protect human health and the environment. The decision to

release any or all of the conditions or restrictions in this EES will be within the discretion of DEQ and EPA, and will require their joint approval in writing unless DEQ and EPA agree otherwise in writing.

6.2. Upon a determination pursuant to Subsection 6.1, DEQ will, as appropriate, execute and deliver to Owner a release of specific conditions or restrictions, or a release of this EES in its entirety.

7. GENERAL PROVISIONS

7.1. **Notice of Transfer/Change of Use.** Owner must notify DEQ within 10 days after the effective date of any conveyance, grant, gift, or other transfer, in whole or in part, of Owner's interest in or occupancy of the Property. Such notice must include the full name and address of the Party to whom Owner has transferred an interest or right of occupancy. In addition, Owner must notify DEQ a minimum of 30 days before the effective date of any change in use of the Property that might expose human receptors to hazardous substances. Such notice must include complete details of any planned development activities or change in use. Notwithstanding the foregoing, Owner may not commence any development inconsistent with the conditions or restrictions in Section 3 without prior written approval from DEQ as provided in Subsection 3 of this EES or removal of the condition or restriction as provided in Subsection 6.1, unless DEQ agrees otherwise in writing. This subsection does not apply to the grant or conveyance of a security interest in the Property.

7.2. **Zoning Changes.** Owner must notify DEQ no less than 30 days before Owner's petitioning for or filing of any document initiating a rezoning of the Property that would change the base zone of the Property under the Klamath County zoning code or any successor code. As of the date of this EES, the base zone of the Property is low density residential (RL).

7.3. **Partition.** Owner shall notify DEQ not less than 30 days before Owner's petitioning for or filing of any document initiating a partition of the Property, or relating to a possible partition of the Property. The restrictions in this EES shall run with any partitions of the Property.

7.4. **Payment of Costs or Expenses.** Unless necessary to a removal or remedial action performed by DEQ or EPA in accordance with the ROD, Owner shall pay all costs or expenses incurred related to future construction, excavation, use, or occupation of the Property, including but not limited to (a) demolition, design, engineering, permitting, construction, grading, excavation, and modifications, including architectural, structural, fixtures, utilities, or engineering modifications and HVAC modifications; (b) landscaping modifications; or (c) construction worker health or safety measures. This includes but is not limited to costs for an Oregon licensed asbestos abatement contractor, the removal, management and disposal of disturbed soils or material required to accommodate future construction, excavation, use, or occupation of the Property, and the subsequent repair of the cap (i.e. placement of clean soil, liner, rock, asphalt, etc.) described in Subsection 3.1 above.

7.5. **Inspection and Reporting.** Owner will immediately notify DEQ of any condition or occurrence at the Property that does not conform with provisions of this EES. Notification

provided to DEQ must include sufficient detail to allow DEQ to determine compliance with EES requirements and include a photographic log.

7.6. **Reference in Deed.** A reference to this EES, including its location in the public records, must be recited in any deed conveying the Property or any portion of the Property. Each condition and restriction contained in this EES runs with the land so burdened until such time as the condition or restriction is removed by written certification from DEQ, recorded in the deed records of the County in which the Property is located, certifying that the condition or restriction is no longer required to protect human health or the environment.

7.7. **Effect of Recording.** Upon the recording of this EES, all future Owners are conclusively deemed to have consented and agreed to every condition and restriction contained in this EES, whether or not any reference to this EES is contained in an instrument by which such person or entity occupies or acquires an interest in the Property.

7.8. **Enforcement and Remedies.** Upon any violation of any condition or restriction contained in this EES, the State of Oregon and the United States, in addition to the remedies described in Sections 4 and 5, may enforce this EES through any available means, seeking any available legal or equitable remedies.

7.9. IN WITNESS WHEREOF Grantor and Grantee have executed this Easement and Equitable Servitude as of the date and year first set forth above.

*(The remainder of this page is intentionally left blank.
Signature page follows.)*

BY SIGNATURE BELOW, THE STATE OF OREGON APPROVES AND ACCEPTS THIS CONVEYANCE PURSUANT TO ORS 93.808.

GRANTOR: North Ridge Estates Receivership LLC

By:

Daniel J. Silver, Member

Date:

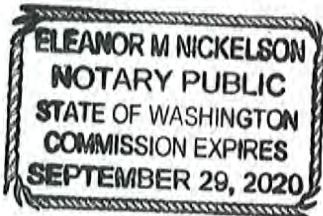
6-17-19

STATE OF WASHINGTON)

) ss.

County of Thurston)

The foregoing instrument is acknowledged before me this 17th day of June, 2019, by Daniel J. Silver as Member of North Ridge Estates Receivership LLC, on its behalf.



Eleanor M. Nickelson
NOTARY PUBLIC FOR WASHINGTON
Residing at Lacey, WA.
My commission expires: 9/29/2020

(The remainder of this page is intentionally left blank.)

GRANTEE: State of Oregon, Department of Environmental Quality

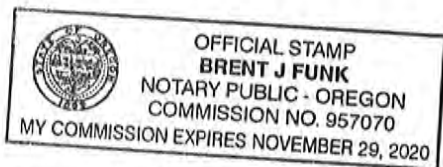
By: [Signature]

Date: 6/19/19

Kevin Parrett, Cleanup Program Manager, Northwest Region

STATE OF OREGON)
) ss.
County of Multnomah)

The foregoing instrument is acknowledged before me this 19th day of June, 2019, by Kevin Parrett as Cleanup Program Manager of the Oregon Department of Environmental Quality, on its behalf.



[Signature]
NOTARY PUBLIC FOR OREGON
My commission expires: 11/29/2020

EXHIBIT A

Legal Description of the Property

Lot 9, TRACT 1306, SECOND EDITION TO NORTH RIDGE ESTATES, according to the official plat thereof on file in the office of the County Clerk of Klamath County, Oregon.

Lot 6, Block 2, TRACT 1267, NORTH RIDGE ESTATES, according to the official plat thereof on file in the office of the County Clerk of Klamath County, Oregon.

EXHIBIT B – NORTH RIDGE ESTATES NPL OPERABLE UNIT 1 SITE BOUNDARY

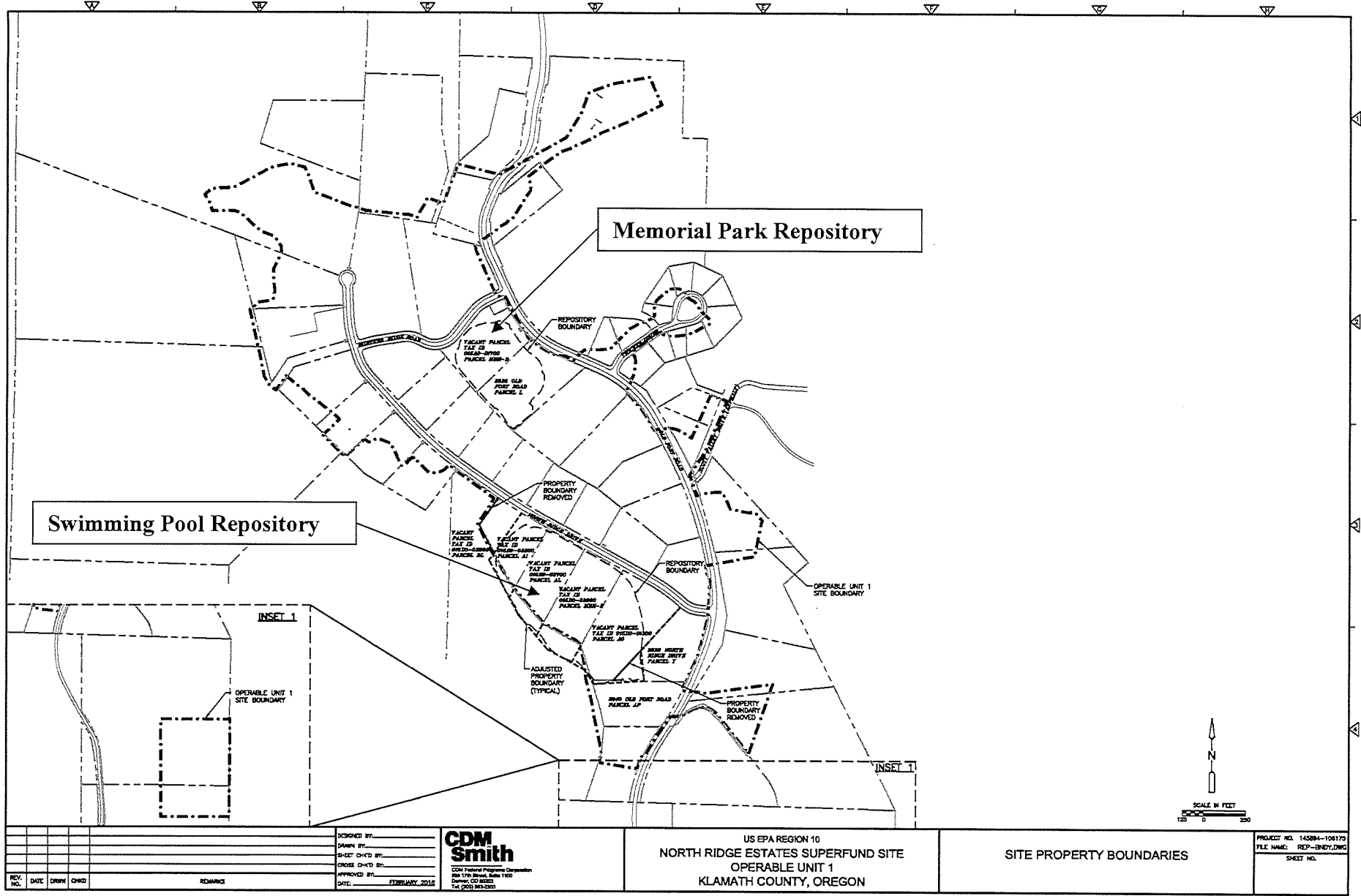


EXHIBIT C – EXAMPLE OF NORTH RIDGE ESTATES EARTHWORK NOTIFICATION AND REPORTING FORM



North Ridge Estates Earthwork Notification and Reporting Form

This Form consists of two parts: *Notification* and *Reporting*. The *Notification Section* is required to be completed and submitted by the property owner or representative to the Department of Environmental Quality (DEQ) at least 90 days prior to the date any ground disturbing or construction activities are scheduled to begin except for emergencies, system failures, or time-critical repairs. **Written approval from DEQ is required before proceeding with activities.** The *Reporting Section* is required to be completed and submitted by the property owner or representative to the DEQ within 45 days of the completion of work.

This Form is not required for minor activities such as installation of fence posts, plantings, or other such activities that go no deeper than two feet below the ground surface and conclude with the protective cap being restored to original grade.

Owners should ensure excavation work does not impact underground utilities by calling the Oregon Utility Notification Center (811) prior to performing any excavation activities.

Am I required to complete this form and perform associated requirements? Yes. The submittal of this *North Ridge Estates Earthwork Notification and Reporting Form* and following any requirements (i.e. using an Oregon-licensed asbestos abatement company during ground disturbing action) specified by DEQ is required by the Easement & Equitable Servitude (deed restriction) recorded on your property. Failure to submit the Form and follow requirements may result in enforcement action and civil penalties.

Why do I have to do this? Asbestos contaminated material and asbestos fibers remain in soils under the protective cap constructed on your property. Working with DEQ will prevent exposure to you, other residents, and workers to asbestos fibers in soil, prevent migration of asbestos contamination to clean areas, and ensure contaminated soil is properly handled and disposed.

Who pays for preparation of the form and any requirements? The property owner is responsible for all costs (including the Oregon-licensed asbestos abatement company) associated with any voluntary ground disturbing or construction activities performed on their property in accordance with the Easement & Equitable Servitude. There is no cost associated with the review of the Form by DEQ.

What does the protective cap look like? Multiple types of materials were used as protective caps including but not limited to minimum of two-feet of clean soil, asphalt and concrete surfaces, large rock surfaces, and liners (i.e., below covered porches and in crawlspaces).

Where is the protective cap located on my property? Protective caps were installed on the entire property of the majority of homes within the North Ridge Estates Subdivision following excavation activities. Some

properties, generally on the east side of Old Fort Rd., have protective caps on only a portion of the property. As-built drawings for each property were prepared following the completion of the cap installation. These drawings show the location excavated and capped areas.

Where can I find a copy of the easement & equitable servitude and as-built drawings for my property? These documents may be viewed on-line through DEQ's Environmental Cleanup Site Information (ECSI) database.

Go to <http://www.oregon.gov/deq/pages/index.aspx>, under the "Hazards and Cleanup" section, select "Environmental Cleanup Site Information Database" select "Search complete ECSI database", then enter NRE in the Site Name box and click "Submit" at the bottom of the page. Next, find your property and click the Site ID No. (i.e. 6014) in the Site ID/Info column. Scroll down to the Site Document section to select the documents. If you do not have web access or need assistance, please contact the DEQ project manager listed below.

Where do I submit this form? Submit the form to the DEQ project manager listed below.

Who do I call with questions? Please contact the DEQ project manager listed below with any questions.

Katie Daugherty
DEQ Project Manager
Phone: 503-229-6748
Fax: 503-229-6124
700 NE Multnomah St., Suite 600
Portland, OR 97232
Email: Daugherty.Katie@deq.state.or.us

EXHIBIT C – CONTINUED
North Ridge Estates Earthwork Notification and Reporting Form
Notification Section

Contact Person Information

Property Owner Information

Name: _____ Company: _____ Mailing Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____	Same as Contact Person? Yes No Name: _____ Mailing Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____
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Property Address Where Work Will be Performed: _____

Form Completed By: _____

Describe Work to be Performed: _____

Expected Depth of Work: _____ feet below ground surface

Date Excavation or Construction Actions Expected to Start: _____

Visit www.Oregon.gov/DEQ for a list of Oregon licensed asbestos abatement contractors. Select the *Asbestos Information for Homeowners* topic and then select the *Hiring the Right Contractor* topic to view the current list.

Proposed Asbestos Abatement Company Name: _____

Contact: _____ Phone: _____

- ☐ Attach a drawing showing the approximately location of work (See the cover page for directions on finding your as-built drawings on-line). Drawing must show at a minimum major site features (i.e. house, driveway) and location of planned excavation or construction activities.

Submit the form to:

Katie Daugherty, DEQ Project Manager

Via Email: Daugherty.Katie@deq.state.or.us

Via Mail: 700 NE Multnomah St., Suite 600, Portland, OR 97232

Questions? Call 503-229-6748

Via Fax: 503-229-6124

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DEQ to Complete

Date Received: _____

Will work breach protective cap?

☐ **Yes Reason:** ☐ work deeper than cap ☐ work disturbed liner ☐ other: _____

If Yes, use of Oregon licensed asbestos abatement contractor required to perform ground disturbing portions of work and manage contaminated material generated. Excavated soil required to go to a landfill that accepts asbestos contaminated materials.

☐ **No Reason:** ☐ work less than cap depth ☐ work will not disturb liner ☐ other: _____

If no, completion of Reporting Section not required.

☐ **Additional Information Needed.** Specify: _____

Additional Information Received on: _____

☐ DEQ approves work described above to proceed.

Approved by: _____ Date Approved: _____

☐ DEQ approval not required as work is not expected to breach cap (i.e. cap is > 2 feet in this area).

Reviewed by: _____ Date: _____

EXHIBIT C – CONTINUED

North Ridge Estates Earthwork Notification and Reporting Form *Reporting Section*

Reporting Section Completed By:

Name:	_____
Company:	_____
Mailing Address:	_____
City:	_____ State: _____ Zip: _____
Phone:	_____
Email:	_____

Asbestos Abatement Company that performed the cap disturbing work

Same as Contact Person?	Yes	No
Name:	_____	
Company:	_____	
Mailing Address:	_____	
City:	_____ State: _____ Zip: _____	
Phone:	_____	
Email:	_____	

Dates Asbestos Abatement Company performed work: _____

Attach the following:

- ☐ Drawing showing actual location of cap disturbing work
- ☐ Photos of Restored Area
- ☐ Documentation from the Asbestos Abatement Company for work completed
- ☐ Landfill Disposal Receipts for asbestos contaminated material

Submit the form to:

Katie Daugherty, DEQ Project Manager

Via Email: Daugherty.Katie@deq.state.or.us

Via Mail: 700 NE Multnomah St., Suite 600, Portland, OR 97232

Via Fax: 503-229-6124

Questions? Call 503-229-6748

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DEQ to Complete

Date Received: _____

All required documentation provided? ☐ Yes ☐ No Explain: _____

Follow-up Required? ☐ Yes Explain: _____ ☐ No

☐ Cap restoration confirmed during annual site inspection or other site visit.

Inspected by: _____ ☐ DEQ ☐ Contractor _____

Date Inspected: _____

APPENDIX K – FACT SHEET

Fact Sheet

Digging at the North Ridge Estates Superfund Site

What do I need to do or know?

- 1) Perform all other normal permitting and utility locates as you would for any other project.
- 2) Be familiar with the types of protective caps at North Ridge Estates. The protective cap is intended to prevent people's exposure to any remaining asbestos-contaminated materials, including asbestos fibers in soil. Protective caps include:
 - A two-foot layer of clean soil with vegetation
 - Asphalt and concrete surfaces, such as garage concrete floor or basement concrete floor
 - Boulders
 - Black liners installed below covered porches and in home crawl spaces
 - Orange liners below the soil cap
- 3) Review the terms of the Easement and Equitable Servitude (EES) document recorded on the deed of your property. Determine if your planned activity is within the area covered by restrictions outlined in the EES. Some properties on the edge of the Superfund site only have a portion of the property restricted. *General rule of thumb: if the area was excavated during the Superfund Cleanup, the area is restricted.* Can't find your EES? Contact the Oregon Department of Environmental Quality (DEQ) project manager and they will email you a copy.
- 4) All activities or uses that could jeopardize the function of the protective cap, are prohibited without prior written approval from the DEQ.
- 5) Follow the steps below for your specific activity.

I want to dig less than two feet - what are the required steps?

- 1) Minor activities are allowed within the **soil protective cap**, such as installing fence posts, planting, or other activities that go no deeper than two feet below the ground surface without prior written approval from DEQ.
- 2) You must fully restore the cap to the surface after the activities are completed.
- 3) Stop immediately and call the DEQ project manager if you see an orange liner. **No matter the depth!** You are entering an asbestos contamination zone and risk exposure to asbestos if you continue.



Example of Orange Liner. 2018. Installing marker barrier consisting of rock base and orange liner on Parcel B prior to covering with clean soil.



Example of Black Liner. 2018. Black liner with rock to hold in place on Parcel A.

I want to dig deeper than two feet, dig below a black or orange liner, dig through asphalt or concrete, or move boulders on my property - what are the required steps?

- 1) Fill out the *North Ridge Estates Earthwork Notification and Reporting Form* and submit this form to the DEQ project manager. Can't find the form? Contact the project manager and they will email you a copy.

The project manager will review the information provided in the form and work with you to determine the conditions under which your work may be performed.

If your work will breach the cap, you must, at your own expense, use an Oregon-licensed asbestos abatement company during any action that may disturb a contaminated area. Any excavated material, including soil, will be required to be disposed at a landfill. If the liner is damaged during work, you must replace it at your expense.

- 2) Once work is complete, fill out the reporting section of the *North Ridge Estates Earthwork Notification and Reporting Form* and return to the DEQ project manager.



State of Oregon
Department of
Environmental
Quality

Cleanup Program
700 NE Multnomah St.,
Suite 600
Portland, OR 97232
Phone: 503-860-3943
800-452-4011
Fax: 503-229-6124
Katie.Daugherty@deq.state.or.us
Contact: Katie Daugherty

www.oregon.gov/DEQ

DEQ is a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.

Alternative formats
DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.

APPENDIX L – POST-EXCAVATION AIR MONITORING RESULTS

TABLE 5
Summary of Air Monitoring Results at Test Home (Parcel Y)

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
3636NRD-1-ST1-051116	Stationary location in family room	stationary	ISO 13794	Overloaded with particulate (~28%)	3.8	22.5	5,114	0.001	49	<0.0003
3636NRD-1-ST2-051116	Stationary location in living room	stationary	ISO 13794	Overloaded with particulate (~59%)	6.1	18.6	6,805	0.001	37	<0.0003
3636NRD-1-ST3-051116	Stationary location in master bedroom	stationary	ISO 13794	Overloaded with particulate (~86%)	7.2	10	4,304	0.001	115	0.0009
3636NRD-1-ST13-051116	Stationary location in master bedroom (duplicate)	stationary	ISO 13794	Overloaded with particulate (~70%)	7.2	10	4,282	0.001	232	0.0009
3636NRD-1-ABS1-HH-051116	Personal air sample cassette worn during 1 st set of light cleaning throughout home	ABS (~10 L/min)	—	Overloaded with particulate (~50%)	10.1	2	1,218	0.1	NA	NR
3636NRD-1-ABS1-HL-051116	Personal air sample cassette worn during 1 st set of light cleaning throughout home	ABS (~6 L/min)	—	Overloaded with particulate (~45%)	6.3	2	755	0.1	NA	NR
3636NRD-1-ABS1-LH-051116	Personal air sample cassette worn during 1 st set of light cleaning throughout home	ABS (~4 L/min)	ISO 10312	—	4.3	2	510	0.1	10	0.0145
3636NRD-1-ABS1-LL-051116	Personal air sample cassette worn during 1 st set of light cleaning throughout home	ABS (~2 L/min)	ISO 10312	—	2	2	238	0.1	10	<0.0155
3636NRD-1-ABS2-HH-051116	Personal air sample cassette worn during 2 nd set of light cleaning throughout home	ABS (~10 L/min)	—	Overloaded with particulate (~50%)	10.3	~1.4	877 (Sample was discarded)	0.1	NA	NR
3636NRD-1-ABS2-HL-051116	Personal air sample cassette worn during 2 nd set of light cleaning throughout home	ABS (~6 L/min)	—	Overloaded with particulate (~35%)	6.5	2	783	0.1	NA	NR
3636NRD-1-ABS2-LH-051116	Personal air sample cassette worn during 2 nd set of light cleaning throughout home	ABS (~4 L/min)	ISO 10312	—	4.3	2	519	0.1	10	<0.0071
3636NRD-1-ABS2-LL-051116	Personal air sample cassette worn during 2 nd set of light cleaning throughout home	ABS (~2 L/min)	ISO 10312	—	2	2	244	0.1	10	<0.0152
FB1-051116	Field blank (Garage/driveway)	Field blank	ISO 10312	—	—	—	0	—	10	None
FB2-051116	Field blank (Garage/driveway)	Field blank	ISO 10312	—	—	—	0	—	10	None
LB01-041416	Filter lot blank	Lot blank	ISO 10312	—	—	—	0	—	10	None

Notes:

ABS: activity based sampling

f/cc: fibers per cubic centimeter

L: Liters

L/min: Liters per minute

NA: not analyzed

NR: Not reported

PCMe: Phase contrast microscopy equivalent

TABLE 6
Parcel Y Post Excavation Air Monitoring Results

Sample IDs	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
3636NRD-1-ABS1-LH-110216	Personal air sample cassette worn during 1 st set of light cleaning throughout home at low-high flow rate	ABS (~4 L/min)	Asbestos by TEM (ISO 13794)	Overloaded with particulate (~85%)	4	2	477	0.1	10	≤0.0149
3636NRD-1-ABS1-LL-110216	Personal air sample cassette worn during 1 st set of light cleaning throughout home at low-low flow rate	ABS (~2 L/min)	NA	Overloaded with particulate (~85%)	2	2	238	0.1	NA	NA
3636NRD-1-ABS2-LH-110216	Personal air sample cassette worn during 2 nd set of light cleaning throughout home at low-high flow rate	ABS (~4 L/min)	NA	Overloaded with particulate (~85%)	4	2	484	0.1	NA	NA
3636NRD-1-ABS2-LL-110216	Personal air sample cassette worn during 2 nd set of light cleaning throughout home at low-low flow rate	ABS (~2 L/min)	Asbestos by TEM (ISO 10312)	—	2	2	241	0.1	10	≤0.0147
3636NRD-1-ABS2-LL2-110216	Personal air sample cassette worn during 2 nd set of light cleaning throughout home at low-low flow rate (duplicate)	ABS (~2 L/min)	Asbestos by TEM (ISO 10312)	Field duplicate	2	2	246	0.1	10	<0.0144
3636NRD-1-ST1-110216	Stationary location in master bedroom	Stationary	Asbestos by TEM (ISO 13794)	Overloaded with particulate (~85%)	3.8	23	5,230	0.001	91	<0.0003
3636NRD-1-ST2-110216	Stationary location in family room	Stationary	Asbestos by TEM (ISO 13794)	Overloaded with particulate at preparation step	3.4	23	4,704	0.001	193	<0.0003
3636NRD-1-ST3-110216	Stationary location in formal dining room/front living room	Stationary	Asbestos by TEM (ISO 13794)	Overloaded with particulate at preparation step	3.8	23	5,182	0.001	46	<0.0003
3636NRD-1-FB01-110216	Field blank (Garage)	Field blank	Asbestos by TEM (ISO 10312)	—	—	1	0	—	10	0
3636NRD-AT1-062117	Attic sample collected at low-low flow rate	Stationary in attic	NA	Not evaluated	2	1.7	207	0.1	NA	NA
3636NRD-AT12-062117	Field duplicate attic sample collected at low-low flow rate	Stationary in attic	NA	Not evaluated	2.1	1.7	207	0.1	NA	NA

TABLE 6
Parcel Y Post Excavation Air Monitoring Results

Sample IDs	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
3636NRD-AT2-062117	Attic sample collected at low-high flow rate	Stationary in attic	ISO 10312	—	4	1.7	399	0.1	10	<0.0089
3636NRD-CS1-062117	Attic sample collected at low-low flow rate	Stationary crawl space	NA	Not evaluated	2	1.7	206	0.1	NA	NA
3636NRD-CS2-062117	Attic sample collected at low-high flow rate	Stationary crawl space	ISO 10312	—	4.2	1.7	424	0.1	10	<0.0083
3636NRD-FB1-062117	Field blank (Garage)	Field blank	ISO 10312	—	—	1	0	—	10	0
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMe: Phase contrast microscopy equivalent										

TABLE 7
Parcel AP Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post Remediation Action Level (PCM/f/cc)	Grid Openings Analyzed	Sample Result (PCM/f/cc)
2840OFR-2-ABS1-LH-110316	Personal air sample cassette worn during 1 st set of light cleaning on the second story (loft) of the home at low-high flow rate	ABS (~4 L/min)	NA	Uneven particulate observed at preparation	4	2	485	--	--	NA
2840OFR-2-ABS1-LL-110316	Personal air sample cassette worn during 1 st set of light cleaning on the second story (loft) of the home at low-low flow rate	ABS (~2 L/min)	ISO 10312	--	2	2	244	0.1	10	<0.0146
2840OFR-1-ABS2-LH-110316	Personal air sample cassette worn during 2 nd set of light cleaning throughout the first story of the home at low-high flow rate	ABS (~4 L/min)	NA	Overloaded with particulate (~75%)	4	2	486	--	--	NA
2840OFR-1-ABS2-LL-110316	Personal air sample cassette worn during 2 nd set of light cleaning throughout the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 13794	Overloaded with particulate (~35%)	2.1	2	249	0.1	10	<0.0286
2840OFR-1-ABS3-LH-110316	Personal air sample cassette worn during 3 rd set of light cleaning throughout the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 13794	Overloaded with particulate (~35%)	4	2	484	0.1	10	<0.0294
2840OFR-1-ABS3-LH2-110316	Personal air sample cassette worn during 3 rd set of light cleaning throughout the first story of the home at low-high flow rate (duplicate)	ABS (~4 L/min)	ISO 13794	Overloaded with particulate (~85%) field duplicate	4	2	478	0.1	10	<0.0298
2840OFR-1-ABS3-LL-110316	Personal air sample cassette worn during 3 rd set of light cleaning throughout the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	Overloaded with particulate (~45%)	2	2	246	--	--	NA
2840OFR-1-FB1-110316	Field blank (Garage)	Field blank	ISO 10312	--	--	1	0	--	10	0
2840OFR-1-ST1-110316	Stationary location in master bedroom	stationary	ISO 13794	Overloaded with particulate (rejected at preparation)	3.5	24	5,089	0.001	94	0.0006
2840OFR-1-ST2-110316	Stationary location in family room	stationary	ISO 13794	Overloaded with particulate (rejected at preparation)	3.6	24	5,289	0.001	90	0.0003
2840OFR-1-ST3-110316	Stationary location in child front bedroom	stationary	ISO 13794	Overloaded with particulate (rejected at preparation)	3.8	24	5,536	0.001	86	<0.0003
2840OFR-2-ST4-110316	Stationary location in loft	stationary	ISO 13794	Overloaded with particulate (rejected at preparation)	3.8	24	5,480	0.001	87	<0.0003
2840OFR-AT1-061917	Attic stationary air sample collected at low-low flow rate	stationary	NA	Not evaluated	2	1	117	0.1	NA	NA
2840OFR-AT2-061917	Attic stationary air collected at low-high flow rate	stationary	ISO 10312	--	4	1	230	0.1	10	<0.0154
2840OFR-CS1-061917	Crawl space stationary air collected at low-low flow rate	stationary	NA	Not evaluated	2.1	1	120	0.1	NA	NA
2840OFR-CS2-061917	Crawl space stationary air collected at low-high flow rate	stationary	ISO 10312	--	4	1	234	0.1	10	<0.0151
2840OFR-FB1-061917	Field blank (Garage)	Blank	ISO 10312	--	--	1	0	--	10	0
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCM: Phase contrast microscopy equivalent										

TABLE 8
Parcel F Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMcf/cc)	Grid Openings Analyzed	Sample Result (PCMcf/cc)
3440NRD-1-ABS1-LH-062017	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	4	2	476	0.1	10	<0.0074
3440NRD-1-ABS1-LL-062017	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	2.1	2	251	--	--	NA
3440NRD-2-ABS2-LH-062017	Personal air sample cassette worn during 2 nd set of light cleaning on the second story of the home at low-high flow rate	ABS (~4 L/min)	NA	4.1	2	489	--	Overloaded ≥25%	NA
3440NRD-2-ABS2-LL-062017	Personal air sample cassette worn during 2 nd set of light cleaning on the second story of the home at low-low flow rate	ABS (~2 L/min)	ISO 10312	2.1	2	253	0.1	10	<0.014
3440NRD-2-ABS2-LL2-062017	Personal air sample cassette worn during 2 nd set of light cleaning on the second story of the home at low-low flow rate	ABS (~2 L/min)	ISO 10312	2	2	244	0.1	10	<0.0145
3440NRD-1-ST2-062017	Stationary location in kitchen/living room on first floor	Stationary indoor	ISO 10312	3.9	22	5,141	0.001	23	<0.0003
3440NRD-1-ST3-062017	Stationary location in first floor bedroom	Stationary indoor	ISO 10312	3.9	22	5,213	0.001	23	0.0006
3440NRD-2-ST1-062017	Stationary location in master bedroom on second floor	Stationary indoor	ISO 10312	3.9	22	5,161	0.001	23	<0.0003
3440NRD-2-ST4-062017	Stationary location in second floor loft	Stationary indoor	ISO 10312	3.7	22	4,923	0.001	24	<0.0003
3440NRD-CS1-062017	Stationary sample in crawl space	Stationary in crawl space	NA	2.2	1.87	251	--	--	NA
3440NRD-CS2-062017	Stationary sample in crawl space	Stationary in crawl space	ISO 10312	4.1	1.87	454	0.1	10	<0.0078
3440NRD-FB1-062017	Garage porch	Field blank	ISO 10312	--	--	0	--	10	0
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMcf: Phase contrast microscopy equivalent									

TABLE 9
Parcel N Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
3668OFR-1-ABS1-LJI-062117	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	NA	Overloaded	4.1	2	495	--	--	NA
3668OFR-1-ABS1-LL-062117	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 13794	Overloaded with particulate (~55%)	2	2	243	0.1	10	<0.0291
3668OFR-1-ABS1-LL2-062117	Duplicate personal air sample cassette worn during 1st set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 13794	Overloaded with particulate (~65%)	2.1	2	247	0.1	20	<0.0286
3668OFR-1-ABS2-LH-062117	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	NA	Overloaded	4.1	2	490	--	--	NA
3668OFR-1-ABS2-LL-062117	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 13794	Overloaded with particulate (~65%)	2.1	2	249	0.1	10	<0.0284
3668OFR-1-ST1-062117	Stationary location in master bedroom on first floor	Stationary indoor	ISO 10312	Filter blown out at preparation	3.6	22	4,804	0.001	25	<0.0003 UJ
3668OFR-1-ST2-062117	Stationary location in kitchen on first floor	Stationary indoor	ISO 13794	Overloaded with particulate (~95%)	3.9	22	5,205	0.001	91	<0.0003
3668OFR-1-ST3-062117	Stationary location in living room on first floor	Stationary indoor	ISO 13794	Overloaded with particulate (~85%)	3	22	4,000	0.001	119	<0.0003
3668OFR-1-ST4-062117	Stationary location in loft on second floor	Stationary indoor	ISO 13794	Overloaded with particulate (30%)	3.8	22	5,108	0.001	47	<0.0003
3668OFR-AT1-062117	Stationary sample in attic	Stationary in attic	NA	--	2	1	119	--	--	NA
3668OFR-AT2-062117	Stationary sample in attic	Stationary in attic	ISO 10312	--	3.9	1	236	0.1	10	<0.0149
3668OFR-CS1-062117	Stationary sample in crawl space	Stationary in crawl space	NA	--	2.1	1	123	--	--	NA
3668OFR-CS2-062117	Stationary sample in crawl space	Stationary in crawl space	ISO 10312	--	4	1	237	0.1	10	<0.0149
3668OFR-FBI-062117	Garage	Field Blank	ISO 10312	--	--	--	0	--	10	0
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMe: Phase contrast microscopy equivalent										

TABLE 10
Parcel G Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMc f/cc)	Grid Openings Analyzed	Sample Result (PCMc f/cc)
3434NRD-1-ABS1-LH-062217	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	4.0	2.0	475	0.1	10	<0.0074
3434NRD-1-ABS1-LI-062217	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	2.1	2.0	250	--	--	NA
3434NRD-1-ABS2-LH-062217	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	4.0	2.0	482	0.1	10	<0.0073
3434NRD-1-ABS2-LH2-062217	Duplicate personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	4.0	2.0	482	0.1	10	<0.0073
3434NRD-1-ABS2-LI-062217	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	2.0	2.0	240	--	--	NA
3434NRD-1-ST2-062217	Stationary location in kitchen/living room on first floor	Stationary	ISO 10312	3.6	22	4769	0.001	26	<0.0003
3434NRD-1-ST3-062217	Stationary location in first floor entertainment room	Stationary	ISO 10312	3.6	22	4733	0.001	25	<0.0003
3434NRD-1-ST1-062217	Stationary location in master bedroom on first floor	Stationary	ISO 10312	3.6	22	4697	0.001	25	<0.0003
3434NRD-1-ST4-062217	Stationary location in teen bedroom on first floor	Stationary	ISO 10312	4.2	22	5497	0.001	22	<0.0003
3434NRD-1-ST41-062217	Duplicate stationary location in teen bedroom on first floor	Stationary	ISO 10312	3.0	22	3964	0.001	30	<0.0003
3434NRD-AT1-062217	Stationary sample in attic	Stationary in attic	ISO 10312	4.0	1	240	0.1	10	<0.0147
3434NRD-AT2-062217	Stationary sample in attic	Stationary in attic	NA	2.0	1	122	--	--	NA
3434NRD-CS1-062217	Stationary sample in crawl space	Stationary in crawl space	NA	2.1	1	124	--	--	NA
3434NRD-CS2-062217	Stationary sample in crawl space	Stationary in crawl space	ISO 10312	4.0	1	242	0.1	10	<0.0146
3434NRD-FB01-062217	Garage	Field blank	ISO 10312	--	--	0	--	10	0

Notes:

ABS: activity based sampling

f/cc: fibers per cubic centimeter

L: Liters

L/min: Liters per minute

NA: not analyzed

NR: Not reported

PCMc: Phase contrast microscopy

equivalent

TABLE 11
Parcel AQ Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
2720OFR-1-ABS1-LJI-062317	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	4	2	478	0.1	10	<0.0074
2720OFR-1-ABS1-LI-062317	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	2	2	243	--	--	NA
2720OFR-1-ABS2-LH-062317	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	4	2.05	496	0.1	10	<0.0071
2720OFR-1-ABS2-LI-062317	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	2	2.05	244	--	--	NA
2720OFR-1-ST2-062317	Stationary location in kitchen/living room on first floor	Stationary	ISO 10312	3.5	22.9	4,861	0.001	24	<0.0003
2720OFR-1-ST3-062317	Stationary location in first floor bedroom	ABS (~2 L/min)	ISO 10312	3.7	22.9	5,030	0.001	25	<0.0003
2720OFR-1-ST1-062317	Stationary location in master bedroom on first floor	Stationary	ISO 10312	3.6	22.9	4,983	0.001	24	<0.0003
2720OFR-1-ST32-062317	Duplicate stationary location in small dirty bedroom	Stationary field duplicate	ISO 10312	3.5	22.9	4,831	0.001	25	<0.0003
2720OFR-AT1-062317	Stationary sample in attic	Stationary attic	NA	2	1	119	--	--	NA
2720OFR-AT2-062317	Stationary sample in attic	Stationary attic	ISO 10312	3.9	1	235	0.1	10	<0.015
2720OFR-CS1-062317	Stationary sample in crawl space	Stationary crawl space	NA	2.1	1	125	--	--	NA
2720OFR-CS2-062317	Stationary sample in crawl space	Stationary crawl space	ISO 10312	4	1	241	0.1	10	<0.0147
2720OFR-FB01-062317	Garage	Field blank	ISO 10312	--	--	0	--	10	0
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMe: Phase contrast microscopy equivalent									

TABLE 12
Parcel S Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
3530HRR-2-ABS1-LH-082417	Personal air sample cassette worn during 1 st set of light cleaning on the second story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	--	3.9829	2	486	0.1	10	<0.0073
3530HRR-2-ABS1-LI-082417	Personal air sample cassette worn during 1 st set of light cleaning on the second story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was selected for analysis	2.078	2	254	--	--	NA
3530HRR-1-ABS2-LH-082417	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	--	3.9694	2	480	0.1	10	<0.0074
3530HRR-1-ABS2-LI-082417	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was selected for analysis	1.951	2	236	--	--	NA
3530HRR-1-ABS3-LH-082417	Personal air sample cassette worn during 3 rd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	--	3.9236	2	471	0.1	10	<0.0075
3530HRR-1-ABS3-LI-082417	Personal air sample cassette worn during 3 rd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was selected for analysis	2.107	2	253	--	--	NA
3530HRR-1-STA1-082417	Stationary location in master bedroom on first floor	Stationary	ISO 13794	Overloaded with particulate (~55%)	4.1117	23	5,694	0.001	44	0.0003
3530HRR-1-STA2-082417	Stationary location in kitchen/den on first floor	Stationary	ISO 13794	Overloaded with particulate (~90%)	4.0247	23	5,554	0.001	89	0.0003
3530HRR-1-STA3-082417	Stationary location in living room on first floor	Stationary	ISO 13794	Overloaded with particulate (90%)	4.1416	23	5,703	0.001	87	<0.0003
3530HRR-2-STA4-082417	Stationary location in study/office on second floor	Stationary	ISO 13794	Overloaded with particulate (~40%)	3.8268	23	5,254	0.001	47	0.0003
3530HRR-2-STA5-082417	Stationary location in bedroom on second floor	Stationary	ISO 13794	Overloaded with particulate (~90%)	3.9503	23	5,412	0.001	91	<0.0003
3530HRR-1-AT1-082317	Stationary sample in attic	Stationary in attic	NA	Higher volume sample was selected for analysis	2.12615	1	140	--	--	NA
3530HRR-1-AT2-082317	Stationary sample in attic	Stationary in attic	ISO 10312	--	3.71825	1	245	0.1	10	<0.0144
3530HRR-1-CS1-082317	Stationary sample in crawl space	Stationary in crawl space	NA	Higher volume sample was selected for analysis	2.13885	1	130	--	--	NA
3530HRR-1-CS2-082317	Stationary sample in crawl space	Stationary in crawl space	ISO 10312	--	3.9542	1	241	0.1	10	<0.0146
3530HRR-1-FB01-082317	Garage	Field blank	ISO 10312	--	--	--	0	--	10	0
3530HRR-1-FB01-082417	Garage	Field blank	ISO 10312	--	--	--	0	--	10	0

Notes:
 ABS: activity based sampling
 f/cc: fibers per cubic centimeter
 L: Liters
 L/min: Liters per minute
 NA: not analyzed
 NR: Not reported
 PCMe: Phase contrast microscopy equivalent

TABLE 13
Parcel BM Unit A Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
4343OFR-1A-ABS1-LII-082517	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	--	3.9831	121	482	0.1	10	<0.0073
4343OFR-1A-ABS1-LL-082517	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was selected for analysis	2.0962	121	254	--	--	NA
4343OFR-1A-ABS2-LH-082517	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	--	4.0225	120	483	0.1	10	<0.0073
4343OFR-1A-ABS2-LL-082517	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was selected for analysis	2.099	120	252	--	--	NA
4343OFR-1A-STA1-082517	Stationary location in master bedroom	Stationary	ISO 13794	Overloaded with particulate at preparation	3.5769	1.372	4.908	0.001	101	<0.0003
4343OFR-1A-STA2-082517	Stationary location in kitchen	Stationary	ISO 13794	Overloaded with particulate at preparation	3.5492	1.373	4.873	0.001	51	<0.0003
4343OFR-1A-STA3-082517	Stationary location in living room	Stationary	ISO 13794	Overloaded with particulate at preparation	3.5633	1.374	4.896	0.001	101	<0.0003
4343OFR-1A-MS1-082617	Stationary sample in maintenance shed beneath Unit A at low-low flow rate	Stationary in shed	NA	Higher volume sample was selected for analysis	2.0204	82	166	--	--	NA
4343OFR-1A-MS2-082617	Stationary sample in maintenance shed beneath Unit A at low-high flow rate	Stationary in shed	ISO 10312	--	4.0895	82	335	0.1	10	<0.0105
4343OFR-1A-CS1-082517	Stationary sample in crawl space at low-low flow rate	Stationary in crawl space	NA	Higher volume sample was selected for analysis	2.1058	62	131	--	--	NA
4343OFR-1A-CS2-082517	Stationary sample in crawl space at low-high flow rate	Stationary in crawl space	ISO 10312	--	4.0316	63	254	0.1	10	<0.0139
4343OFR-1A-CS22-082517	Field duplicate stationary sample in crawl space at low-high flow rate	Stationary in crawl space	ISO 10312	--	3.9304	63	248	0.1	10	<0.0143
4343OFR-1A-FB01-082517	Field blank	Field blank	ISO 10312	--	--	--	0	--	10	0

Notes:
 ABS: activity based sampling
 f/cc: fibers per cubic centimeter
 L: Liters
 L/min: Liters per minute
 NA: not analyzed
 NR: Not reported
 PCMe: Phase contrast microscopy equivalent

TABLE 14
Parcel BM Unit B Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
4343OFR-1B-ABS1-LH-082617	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	--	3.8366	120	460	0.1	10	<0.0077
4343OFR-1B-ABS1-LH2-082617	Field duplicate personal air sample cassette worn during 1st set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	--	4.0084	120	481	0.1	10	<0.0073
4343OFR-1B-ABS1-LL-082617	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was selected for analysis	2.0774	120	249	--	--	NA
4343OFR-1B-ABS2-LH-082617	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	NA	Not analyzed because field QC was prepared with lower volume sample	3.9424	120	473	--	--	NA
4343OFR-1B-ABS2-LL-082617	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 10312	--	2.0219	120	243	0.1	10	<0.0146
4343OFR-1B-ABS2-LL2-082617	Field duplicate personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 10312	--	2.0938	120	251	0.1	10	<0.0141
4343OFR-1B-ST'A1-082617	Stationary location in kitchen/living room	Stationary	ISO 10374	Overloaded with particulate (30%)	4.163	1,328	5,528	0.001	45	<0.0003
4343OFR-1B-ST'A2-082617	Stationary location in master bedroom	Stationary	ISO 10312	--	3.6007	1,330	4,789	0.001	25	<0.0003
4343OFR-1B-ST'A3-082617	Stationary location in storage room	Stationary	ISO 10374	Overloaded with particulate (~40%)	3.7046	1,332	4,935	0.001	50	0.0003
4343OFR-1B-FB01-082617	Field blank	Field blank	NA	Not analyzed because sufficient field blanks were analyzed.	--	--	0	--	--	NA
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMe: Phase contrast microscopy equivalent										

TABLE 15
Parcel BM Unit C Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
4343OFR-1C-ABS1-LH-082817	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	NA	Overloaded with particulate at preparation	3.5773	120	429	--	--	NA
4343OFR-1C-ABS1-LH-082817	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 10312	--	2.093	120	251	0.1	10	<0.0141
4343OFR-1C-ABS2-LH-082817	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	--	4.0717	120	489	0.1	10	<0.0072
4343OFR-1C-ABS2-LH2-082817	Duplicate personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 13794	Overloaded with particulate (30%)	3.9672	120	476	0.1	10	<0.0077
4343OFR-1C-ABS2-LL-082817	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 10312	--	2.0406	120	245	0.1	10	<0.0144
4343OFR-1C-STA1-082817	Stationary location in master bedroom	Stationary	ISO 13794	Overloaded with particulate (95%)	3.6053	1,446	5,213	0.001	95	<0.0001
4343OFR-1C-STA2-082817	Stationary location in kitchen/dining room	Stationary	ISO 13794	Overloaded with particulate (85%)	3.6737	1,443	5,301	0.001	93	<0.0001
4343OFR-1C-STA3-082817	Stationary location in second bedroom	Stationary	ISO 13794	Overloaded with particulate (95%)	3.6098	1,448	5,227	0.001	95	<0.0001
4343OFR-1C-FB01-082817	Field blank	Field blank	ISO 10312	--	--	--	0	--	10	0
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMe: Phase contrast microscopy equivalent										

TABLE 16
Parcel BM Unit D Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
4343OFR-ID-ABS1-LII-082917	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	NA	Overloaded with particulate (40%)	3.5489	124	440	--	--	NA
4343OFR-ID-ABS1-LL-082917	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 13794	Overloaded with particulate (40%)	2.0681	124	256	0.1	10	<0.0144
4343OFR-ID-ABS2-LH-082917	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	NA	Overloaded with particulate (35%)	3.9513	120	474	--	--	NA
4343OFR-ID-ABS2-LL-082917	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 13794	Overloaded with particulate (30%)	1.998	120	240	0.1	11	<0.014
4343OFR-ID-ABS2-LL2-082917	Field duplicate personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 13794	Overloaded with particulate (30%)	2.0307	120	244	0.1	11	<0.0138
4343OFR-ID-STA1-082917	Stationary location in master bedroom	Stationary	ISO 13794	Overloaded with particulate (60%)	3.5644	1,339	4,773	0.001	104	<0.0001
4343OFR-ID-STA2-082917	Stationary location in kitchen/living room	Stationary	ISO 13794	Overloaded with particulate (75%)	3.519	1,344	4,730	0.001	104	0.0001
4343OFR-ID-STA3-082917	Stationary location in second bedroom	Stationary	ISO 13794	Overloaded with particulate (85%)	3.5631	1,348	4,803	0.001	103	<0.0001
4343OFR-ID-STA32-082917	Duplicate stationary location in second bedroom	Stationary	NA	Not analyzed because sufficient field duplicates were analyzed	3.8387	1,352	5,190	--	--	NA
4343OFR-ID-FB01-082917	Field blank	Field blank	ISO 10312	--	--	--	0	--	10	0
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMe: Phase contrast microscopy equivalent										

TABLE 17
Parcel BM Unit E Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
4343OFR-2E-ABS1-LH-083017	Personal air sample cassette worn during 1 st set of light cleaning on the second story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	--	4.0171	125	502	0.1	10	<0.007
4343OFR-2E-ABS1-LJ-083017	Personal air sample cassette worn during 1 st set of light cleaning on the second story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was selected for analysis	2.0087	125	251	--	--	NA
4343OFR-1E-ABS2-LH-083017	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	--	3.9324	120	472	0.1	10	<0.0075
4343OFR-1E-ABS2-LJ-083017	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was selected for analysis	2.0883	120	251	--	--	NA
4343OFR-2E-STA1-083017	Stationary location in the second-story bedroom	Stationary	ISO 10312	--	3.6556	1,348	4,928	0.001	25	<0.0003
4343OFR-1E-STA2-083017	Stationary location in kitchen	Stationary	ISO 10312	--	3.6404	1,343	4,890	0.001	25	<0.0003
4343OFR-1E-STA3-083017	Stationary location in living room	Stationary	ISO 13794	Overloaded with particulate (30%)	3.5862	1,346	4,827	0.001	51	<0.0001
4343OFR-1E-CS1-083017	Stationary sample in crawl space at low-high flow rate	Stationary in crawl space	NA	Higher volume sample was selected for analysis	2.0962	120	130	--	--	NA
4343OFR-1E-CS2-083017	Stationary sample in crawl space at low-low flow rate	Stationary in crawl space	ISO 10312	--	3.8959	120	242	0.1	10	<0.0146
4343OFR-1E-FB01-083017	Field blank	Field blank	NA	Not analyzed because sufficient field blanks were analyzed	--	--	0	--	--	NA
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMe: Phase contrast microscopy equivalent										

TABLE 18
Parcel M Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
3560OFR-1-ABS1-LH-102517	Personal air sample cassette worn during 1 st set of light cleaning activities on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	--	3.9842	122	486	0.1	10	<0.0073
3560OFR-1-ABS1-LH2-102517	Duplicate personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	Duplicate sample	3.976	122	486	0.1	10	<0.0073
3560OFR-1-ABS1-LL-102517	Personal air sample cassette worn during 1 st set of light cleaning activities on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was selected for analysis	2.0284	122	247	--	--	NA
3560OFR-1-ABS2-LH-102517	Personal air sample cassette worn during 2 nd set of light cleaning activities on the first story of the home at low-high flow rate	ABS (~4 L/min)	NA	Overloaded at prep. Lower volume sample analyzed instead.	4.0395	121	489	--	--	NA
3560OFR-1-ABS2-LL-102517	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 10312	--	1.9988	121	242	0.1	10	<0.0146
3560OFR-1-ST1-102517	Stationary location in master bedroom on first floor	Stationary	ISO 13794	Overloaded at prep	3.4228	1,388	4,751	0.001	104	<0.0003
3560OFR-1-ST3-102517	Stationary location in small bedroom on first floor	Stationary	ISO 13794	Overloaded at prep	3.5213	1,388	4,888	0.001	52	0.0003
3560OFR-1-ST2-102517	Stationary location in kitchen/den on first floor	Stationary	ISO 13794	Overloaded at prep	3.4554	1,388	4,796	0.001	51	<0.0003
3560OFR-1-ST4-102517	Stationary location in living room on first floor	Stationary	ISO 13794	Overloaded at prep	3.4828	1,388	4,834	0.001	102	<0.0003
3560OFR-AT1-102417	Stationary sample in attic	Stationary in attic	NA	Higher volume sample selected for analysis	2.126	63	134	--	--	NA
3560OFR-AT2-102417	Stationary sample in attic	Stationary in attic	ISO 10312	--	4.0829	63	257	0.1	10	<0.0137
3560OFR-CS1-102417	Stationary sample in crawl space	Stationary in crawl space	NA	Higher volume sample was selected for analysis	2.0265	63	128	--	--	NA
3560OFR-CS12-102417	Stationary sample in crawl space	Stationary in crawl space	NA	Higher volume sample was selected for analysis	1.9845	63	125	--	--	NA
3560OFR-CS2-102417	Stationary sample in crawl space	Stationary in crawl space	ISO 10312	--	3.939	63	248	0.1	10	<0.0142
3560OFR-FB01-102417	Field blank (garage)	Field blank	ISO 10312	--	--	--	0	--	10	0
3560OFR-FB01-102517	Field blank (garage)	Field blank	ISO 10312	--	--	--	0	--	10	0

Notes:

ABS: activity based sampling

f/cc: fibers per cubic centimeter

L: Liters

L/min: Liters per minute

NA: not analyzed

NR: Not reported

PCMe: Phase contrast microscopy

equivalent

TABLE 19
Parcel O Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
3808OFR-1-ABS1-LH-102617	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	NA	Overloaded at analysis	4.0358	120	484	--	--	NA
3808OFR-1-ABS1-LL-102617	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 13794	Overloaded at analysis. Analyzed by indirect.	2.0224	120	243	0.1	21	<0.0145
3808OFR-2-ABS2-LH-102617	Personal air sample cassette worn during 2 nd set of light cleaning on the second story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	--	4.0406	120	485	0.1	10	0.0073
3808OFR-2-ABS2-LL-102617	Personal air sample cassette worn during 2 nd set of light cleaning on the second story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample selected for analysis	2.0029	120	240	--	--	NA
3808OFR-3-ABS3-LH-102617	Personal air sample cassette worn during 3 rd set of light cleaning on the third story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	--	3.9528	121	478	0.001	10	<0.0074
3808OFR-3-ABS3-LH2-102617	Duplicate personal air sample cassette worn during 3 rd set of light cleaning on the third story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	--	4.0061	121	485	0.001	10	<0.0073
3808OFR-3-ABS3-LL-102617	Personal air sample cassette worn during 3 rd set of light cleaning on the third story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample selected for analysis	2.0157	121	244	--	--	NA
3808OFR-1-ST1-102617	Stationary location in basement southwest corner	Stationary	NA	Not submitted for analysis	3.611	1,367	4,855	--	--	NA
3808OFR-1-ST2-102617	Stationary location at bottom of the basement stairwell	Stationary	ISO 13794	Overloaded at analysis. Analyzed by indirect.	3.6588	1,367	4,934	0.001	50	<0.0003
3808OFR-2-ST3-102617	Stationary location in master bedroom on second floor	Stationary	ISO 10312	--	3.657	1,367	4,999	0.001	24	<0.0003
3808OFR-2-ST4-102617	Stationary location in kitchen on second floor	Stationary	ISO 10312	--	3.5399	1,367	4,839	0.001	25	<0.0003
3808OFR-2-ST5-102617	Stationary location in den on second floor	Stationary	ISO 10312	--	3.4891	1,367	4,770	0.001	25	<0.0003
3808OFR-3-ST6-102617	Stationary location in bedroom on the third floor	Stationary	ISO 10312	--	3.4787	1,367	4,755	0.001	25	<0.0003
3808OFR-1-AT1-102417	Stationary sample in attic above bedroom	Stationary in attic	NA	Higher volume sample selected for analysis	2.0975	62	130	--	--	NA
3808OFR-1-AT2-102417	Stationary sample in attic above bedroom	Stationary in attic	ISO 10312	--	3.946	62	245	0.1	10	<0.0144
3808OFR-1-AT22-102417	Duplicate stationary sample in attic above bedroom	Stationary in attic	ISO 10312	--	4.0415	62	251	0.1	10	<0.0141
3808OFR-2-AT1-102417	Stationary sample in attic above garage	Stationary in attic	NA	Higher volume sample selected for analysis	1.987	64	127	--	--	NA
3808OFR-2-AT2-102417	Stationary sample in attic above garage	Stationary in attic	ISO 10312	--	3.9412	64	252	0.1	10	<0.014
3808OFR-FB01-102617	Field blank	Field blank	ISO 10312	--	--	--	0	--	10	0
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMe: Phase contrast microscopy equivalent										

TABLE 20
Parcel P Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
3515NRD-1-ABS1-LH-103117	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	--	4.0698	120	488	0.1	10	<0.0072
3515NRD-1-ABS1-LL-103117	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was selected for analysis	2.0546	120	247	--	--	NA
3515NRD-2-ABS2-LH-103117	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	--	4.021	120	483	0.1	10	<0.0073
3515NRD-2-ABS2-LL-103117	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was selected for analysis	2.1279	120	255	--	--	NA
3515NRD-1-ST1-103117	Stationary location in kitchen/den/living room on first floor	Stationary	ISO 10312	--	3.5656	1,323	4,717	0.001	25	<0.0003
3515NRD-1-ST2-103117	Stationary location in master bedroom on first floor	Stationary	ISO 10312	--	3.6907	1,323	4,883	0.001	25	<0.0003
3515NRD-2-ST3-103117	Stationary location in second floor bedroom	Stationary	ISO 10312	--	3.6942	1,323	4,887	0.001	25	<0.0003
3515NRD-2-ST4-103117	Stationary location in second floor playroom above garage	Stationary	ISO 10312	--	3.6061	1,323	4,771	0.001	25	<0.0003
3515NRD-AT1-103117	Stationary sample in attic	Stationary in attic	NA	Higher volume sample was selected for analysis	2.0842	61	127	--	--	NA
3515NRD-AT2-103117	Stationary sample in attic	Stationary in attic	ISO 10312	--	4.1512	61	253	0.1	10	<0.0139
3515NRD-CS1-103117	Stationary sample in crawl space	Stationary in crawl space	NA	Higher volume sample was selected for analysis	2.1276	61	130	--	--	NA
3515NRD-CS2-103117	Stationary sample in crawl space	Stationary in crawl space	ISO 10312	--	4.1246	61	252	0.1	10	<0.014
3515NRD-FB01-103117	Field blank	Field blank	ISO 10312	--	--	--	0	0.1	10	NA

Notes:

ABS: activity based sampling

f/cc: fibers per cubic centimeter

L: Liters

L/min: Liters per minute

NA: not analyzed

NR: Not reported

PCMe: Phase contrast microscopy equivalent

TABLE 21
Parcel E Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
3502NRD-1-ABS1-LH-102717	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	—	4.0036	122	488	0.1	10	<0.0072
3502NRD-1-ABS1-LL-102717	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was selected for analysis	2.084	122	254	—	—	NA
3502NRD-1-ABS2-LH-102717	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	—	4.0133	122	490	0.1	10	<0.0072
3502NRD-1-ABS2-LH2-102717	Duplicate personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	—	3.9938	122	487	0.1	10	<0.0072
3502NRD-1-ABS2-LL-102717	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was selected for analysis	1.9614	122	239	—	—	NA
3502NRD-1-ST1-102717	Stationary location in master bedroom on first floor	Stationary	ISO 10312	—	3.5477	1,378	4,889	0.001	25	<0.0003
3502NRD-1-ST2-102717	Stationary location in the den on first floor	Stationary	ISO 10312	—	3.6182	1,378	4,986	0.001	24	<0.0003
3502NRD-1-ST3-102717	Stationary location between the dining room, living room, and study on first floor	Stationary	ISO 10312	—	3.6989	1,378	5,097	0.001	24	<0.0003
3502NRD-AT1-102717	Stationary sample in attic	Stationary in attic	NA	Higher volume sample was analyzed	2.0363	65	132	—	—	NA
3502NRD-AT2-102717	Stationary sample in attic	Stationary in attic	ISO 10312	—	4.0625	65	264	0.1	10	<0.0134
3502NRD-CS1-102717	Stationary sample in crawl space	Stationary in crawl space	NA	Higher volume sample was analyzed	1.9988	64	128	—	—	NA
3502NRD-CS2-102717	Stationary sample in crawl space	Stationary in crawl space	ISO 10312	—	4.0477	64	259	0.1	10	<0.0136
3502NRD-FB01-102717	Field blank collected in the garage	Field blank	ISO 10312	—	—	—	0	—	10	0
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMe: Phase contrast microscopy equivalent										

TABLE 22
Parcel D Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMcf/cc)	Grid Openings Analyzed	Sample Result (PCMcf/cc)
3514NRD-2-ABS1-LH-103017	Personal air sample cassette worn during 1 st set of light cleaning on the second story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	—	4.0075	120	481	0.1	10	<0.0073
3514NRD-2-ABS1-LL-103017	Personal air sample cassette worn during 1 st set of light cleaning on the second story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was selected for analysis	2.0122	120	241	—	—	NA
3514NRD-2-ABS1-LL2-103017	Duplicate personal air sample cassette worn during 1st set of light cleaning on the second story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was selected for analysis	2.044	120	245	—	—	NA
3514NRD-1-ABS2-LH-103017	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	—	3.969	120	476	0.1	10	<0.0074
3514NRD-1-ABS2-LL-103017	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was selected for analysis	2.0525	120	246	—	—	NA
3514NRD-2-ST1-103017	Stationary location in master bedroom on second floor	Stationary	ISO 10312	—	3.4516	1,448	4,998	0.001	24	<0.0003
3514NRD-2-ST12-103017	Duplicate stationary location in master bedroom on second floor	Stationary	ISO 10312	—	3.6386	1,448	5,269	0.001	24	<0.0003
3514NRD-2-ST2-103017	Stationary location in den on second floor	Stationary	ISO 10312	—	3.6131	1,448	5,232	0.001	23	<0.0003
3514NRD-2-ST3-103017	Stationary location in bedroom on second floor	Stationary	ISO 10312	—	3.3844	1,448	4,901	0.001	25	<0.0003
3514NRD-2-ST4-103017	Stationary location in living room on second floor	Stationary	ISO 10312	—	3.6179	1,448	5,239	0.001	23	<0.0003
3514NRD-1-ST5-103017	Stationary location in basement on first floor	Stationary	ISO 10312	—	3.4673	1,448	5,021	0.001	24	<0.0003
3514NRD-AT1-103017	Stationary sample in attic	Stationary in attic	NA	Higher volume sample was selected for analysis	2.0637	60	124	—	—	NA
3514NRD-AT2-103017	Stationary sample in attic	Stationary in attic	ISO 10312	—	4.0591	60	244	0.1	10	<0.0145
3514NRD-CS1-103017	Stationary sample in crawl space	Stationary in crawl space	NA	Higher volume sample was selected for analysis	2.0421	69	141	—	—	NA
3514NRD-CS2-103017	Stationary sample in crawl space	Stationary in crawl space	ISO 10312	—	4.0451	69	279	0.1	10	<0.0127
3514NRD-FB01-103017	Field blank, collected inside the garage	Field blank	ISO 10312	—	—	—	0	—	10	0
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMcf: Phase contrast microscopy equivalent										

TABLE 23
Parcel C Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
3508NRD-1-ABS1-LH-102817	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	NA	Overloaded. Lower volume sample selected for analysis	4.0386	121	489	—	—	NA
3508NRD-1-ABS1-LL-102817	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 13794	Overloaded (analyzed by indirect). According to SAP the higher flow rate sample should have been analyzed when both samples are overloaded.	2.089	121	253	0.1	201	<0.0292
3508NRD-1-ABS2-LH-102817	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	NA	Overloaded. Lower volume sample selected for analysis	3.974	120	476	—	—	NA
3508NRD-1-ABS2-LL-102817	Duplicate personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	NA	Overloaded. Lower volume sample selected for analysis	4.0196	120	482	—	—	NA
3508NRD-1-ABS2-LL-102817	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 10312	—	1.924	120	231	0.1	10	<0.0153
3508NRD-1-ST1-102817	Stationary location in master bedroom on first floor	Stationary	ISO 13794	Overloaded (analyzed by indirect)	3.4219	1,383	4,733	0.001	52	<0.0003
3508NRD-1-ST2-102817	Stationary location in kitchen/den on first floor	Stationary	ISO 13794	Overloaded (analyzed by indirect)	3.5847	1,383	4,958	0.001	100	<0.0001
3508NRD-1-ST3-102817	Stationary location in south bedroom on first floor	Stationary	ISO 13794	Overloaded (analyzed by indirect)	3.5091	1,383	4,853	0.001	102	0.0001
3508NRD-AT1-102817	Stationary sample in attic	Stationary in attic	NA	Higher volume sample was analyzed	2.0728	60	124	—	—	NA
3508NRD-AT2-102817	Stationary sample in attic	Stationary in attic	ISO 10312	—	4.1053	60	246	0.1	10	<0.0143
3508NRD-CS1-102817	Stationary sample in crawl space	Stationary in crawl space	NA	Higher volume sample as analyzed	2.0104	60	121	—	—	NA
3508NRD-CS2-102817	Stationary sample in crawl space	Stationary in crawl space	ISO 10312	—	4.0244	60	241	0.1	10	<0.0146
3508NRD-FB01-102817	Field blank collected in the garage	Field blank	ISO 10312	—	—	—	0	—	10	0
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMe: Phase contrast microscopy equivalent										

TABLE 24
Parcel B Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
3433NRD-2-ABS1-LH-062618	Personal air sample cassette worn during 1 st set of light cleaning on the second story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	—	3.878	120	465.4	0.1	10	<0.0081
3433NRD-2-ABS1-LL-062618	Personal air sample cassette worn during 1 st set of light cleaning on the second story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was analyzed.	2.07	120	248.3	—	—	NA
3433NRD-1-ABS2-LH-062618	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	NA	Overloaded 35%. Duplicate was analyzed as it was not overloaded.	4.033	120	484	—	—	NA
3433NRD-1-ABS2-LL-062618	Duplicate personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	Duplicate ABS (~4 L/min)	ISO 10312	This sample (duplicate) was analyzed instead of primary because it was overloaded.	3.326	120	399	0.1	10	<0.0095
3433NRD-1-ABS2-LL-062618	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was analyzed.	2.056	120	246.7	—	—	NA
3433NRD-1-STA1-062618	Stationary location in master bedroom on first floor	Stationary	ISO 10312	—	3.132	1,358	4,253	0.001	30	<0.0003
3433NRD-1-STA2-062618	Stationary location in kitchen/den on first floor	Stationary	ISO 13794	Overloaded 50% (analyzed by indirect)	3.744	1,358	5,084	0.001	52	<0.0003
3433NRD-1-STA3-062618	Stationary location in study on first floor	Stationary	ISO 10312	—	3.492	1,358	4,741	0.001	27	<0.0003
3433NRD-2-STA4-062618	Stationary location in bedroom (red/brown carpet) on second floor	Stationary	ISO 10312	—	3.471	1,356	4,707	0.001	27	<0.0003
3433NRD-AT1-062618	Stationary sample in attic above garage/kitchen	Stationary in attic	NA	Higher volume sample was analyzed.	1.948	62	120.8	—	—	NA
3433NRD-AT2-062618	Stationary sample in attic above garage/kitchen	Stationary in attic	ISO 10312	—	4.115	62	255.1	0.1	10	<0.0148
3433NRD-AT22-062618	Duplicate stationary sample in attic	Duplicate stationary in attic	ISO 10312	—	4.038	62	250.4	0.1	10	<0.0151
3433NRD-FB01-062618	Field blank collected in the garage	Field blank	ISO 10312	—	—	1	0	—	10	0
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMe: Phase contrast microscopy equivalent										

TABLE 25
Parcel R Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCM/L/cc)	Grid Openings Analyzed	Sample Result (PCM/L/cc)
3537NRD-1-ABS1-LH-062818	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	NA	Overloaded 65% (not analyzed)	3.929	120	471.5	—	—	NA
3537NRD-1-ABS1-LL-062818	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 13794	Overloaded 35% (analyzed by indirect)	2.103	120	252.4	0.1	14	<0.0279
3537NRD-1-ABS2-LH-062818	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	NA	Overloaded 65% (not analyzed)	4.01	120	481.7	—	—	NA
3537NRD-1-ABS2-LL-062818	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 13794	Overloaded 40% (analyzed by indirect)	2.066	120	248	0.1	11	<0.0289
3537NRD-1-ABS2-L12-062818	Duplicate personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 13794	Overloaded 35% (analyzed by indirect) duplicate sample	1.998	120	239.8	0.1	13	<0.0281
3537NRD-1-ABS3-LH-062818	Personal air sample cassette worn during 3 rd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 13794	Overloaded 30% (analyzed by indirect)	4.046	120	485.6	0.1	10	<0.018
3537NRD-1-ABS3-LL-062818	Personal air sample cassette worn during 3 rd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	Overloaded 30% (higher volume sample selected for indirect analysis)	1.974	120	236.9	—	—	NA
3537NRD-1-STA1-062818	Stationary location in master bedroom on first floor	Stationary	ISO 13794	Overloaded 85% (analyzed by indirect)	3.655	1,320	4,825	0.001	218	0.0006
3537NRD-1-STA2-062818	Stationary location in kitchen/den on first floor	Stationary	ISO 13794	Overloaded 90% (analyzed by indirect)	3.53	1,324	4,670	0.001	282	0.0006
3537NRD-1-STA3-062818	Stationary location in living room on first floor	Stationary	ISO 13794	Overloaded 90% (analyzed by indirect)	3.546	1,325	4,698	0.001	224	0.0003
3537NRD-1-STA4-062818	Stationary location in children's bedroom on first floor	Stationary	ISO 13794	Overloaded 90% (analyzed by indirect)	3.532	1,327	4,687	0.001	281	0.0003
3537NRD-2-STA5-062818	Stationary location in miscellaneous room on second floor	Stationary	ISO 13794	Overloaded 95% (analyzed by indirect)	3.818	1,336	5,079	0.001	208	0.0003
3537NRD-3-STA6-062818	Stationary location in large crawl space	Stationary - unfinished basement/analogous to a large crawl space	ISO 10312	—	3.43	1,333	4,572	0.001	28	<0.0003
3537NRD-AT1-062818	Stationary sample in attic, low flow	Stationary low flow in attic	NA	Higher volume sample was analyzed.	2.048	68	139.3	—	—	NA
3537NRD-AT2-062818	Stationary sample in attic, high flow	Stationary high flow in attic	ISO 10312	—	4.032	68	274.2	0.1	10	<0.0158
3537NRD-AT22-062818	Duplicate stationary sample in attic, high flow	Duplicate stationary high flow in attic	NA	Not analyzed as QC frequency goal was already met.	3.836	65	249.4	—	—	NA
3537NRD-FB01-062818	Field blank; collected in the garage	Field blank	ISO 10312	—	—	1	0	—	10	0
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCM/L: Phase contrast microscopy equivalent										

TABLE 26
Parcel Z Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMc f/cc)	Grid Openings Analyzed	Sample Result (PCMc f/cc)
3547NRD-2-ABS1-LH1-062718	Personal air sample cassette worn during 1 st set of light cleaning on the second story of the home at low-high flow rate	ABS (~4 L/min)	NA	Overloaded 30% (analyzed duplicate sample instead)	3.9595	120	475.1	—	—	NA
3547NRD-2-ABS1-LH2-062718	Duplicate personal air sample cassette worn during 1 st set of light cleaning on the second story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	—	3.984	120	478.1	0.1	10	<0.0079
3547NRD-2-ABS1-LL-062718	Personal air sample cassette worn during 1 st set of light cleaning on the second story of the home at low-low flow rate	ABS (~2 L/min)	ISO 10312	Analyzed higher flow sample	2.0385	120	244.6	—	—	NA
3547NRD-1-ABS2-LH1-062718	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	NA	Overloaded 70% (analyzed low sample instead)	4.0065	120	480.8	—	—	NA
3547NRD-1-ABS2-LL-062718	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	ISO 10312	—	1.9895	120	238.7	0.001	10	<0.0158
3547NRD-1-STA1-062718	Stationary location in master bedroom on first floor	Stationary	ISO 13794	Overloaded 50% (analyzed by indirect)	3.418	1,344	4,594	0.001	58	<0.0003
3547NRD-1-STA2-062718	Stationary location in kitchen/den on first floor	Stationary	ISO 13794	Overloaded 70% (analyzed by indirect)	3.595	1,344	4,832	0.001	61	<0.0003
3547NRD-1-STA3-062718	Stationary location in living room on first floor	Stationary	ISO 13794	Overloaded 50% (analyzed by indirect)	3.3794	1,344	4,542	0.001	110	<0.0003
3547NRD-2-STA4-062718	Stationary location in small bedroom on second floor	Stationary	ISO 13794	Overloaded 70% (analyzed by indirect)	3.487	1,344	4,687	0.001	113	<0.0003
3547NRD-2-STA5-062718	Stationary location in large bedroom on second floor	Stationary	ISO 13794	Overloaded 60% (analyzed by indirect)	3.4745	1,344	4,670	0.001	57	<0.0003
3547NRD-AT1-062718	Stationary sample in attic, low flow	Stationary low flow in attic	NA	Analyzed higher flow sample	1.95	62	120.9	—	—	NA
3547NRD-AT2-062718	Stationary sample in attic, high flow	Stationary high flow in attic	ISO 10312	—	3.7665	62	233.5	0.1	10	<0.0162
3547NRD-CS1-062718	Stationary sample in crawl space, low flow	Stationary low flow in crawl space	NA	Analyzed higher flow sample	2.017	61	123	—	—	NA
3547NRD-CS2-062718	Stationary sample in crawl space, high flow	Stationary high flow in crawl space	ISO 10312	—	4.07	61	248.3	0.1	10	<0.0152
3547NRD-CS22-062718	Duplicate stationary sample in crawl space, high flow	Duplicate stationary high flow in crawl space	ISO 10312	—	3.2155	61	196.2	0.1	10	<0.0192
3547NRD-FB01-062718	Field blank collected in the garage	Field blank	ISO 10312	—	—	1	NA	—	10	0
3547NRD-LB01-062718	Lot blank collected in the garage	Lot blank	ISO 10312	—	—	0	NA	—	10	0
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMc: Phase contrast microscopy equivalent										

TABLE 27
Parcel X Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMε f/cc)	Grid Openings Analyzed	Sample Result (PCMε f/cc)
3601NRD-1-ABS1-LH-062918	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	—	3.86	120	463.2	0.1	10	<0.0081
3601NRD-1-ABS1-LL-062918	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample was analyzed.	1.944	120	233.3	—	—	NA
3601NRD-1-ABS2-LH-062918	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	—	4.017	120	482	0.1	10	<0.0078
3601NRD-1-ABS2-LL-062918	Duplicate personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	ABS (~4 L/min)	ISO 10312	Duplicate high flow sample	3.137	120	376.4	0.1	10	<0.01
3601NRD-1-ABS2-LL-062918	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	ABS (~2 L/min)	NA	Higher volume sample analyzed	2.028	120	243.4	—	—	NA
3601NRD-1-STA1-062918	Stationary location in master bedroom on first floor	Stationary	ISO 13794	Overloaded 40% (analyzed by indirect)	3.78	1,325	5,009	0.001	59	<0.0003
3601NRD-1-STA2-062918	Stationary location in kitchen/den on first floor	Stationary	ISO 13794	Overloaded 30% (analyzed by indirect)	3.612	1,330	4,804	0.001	61	<0.0003
3601NRD-1-STA3-062918	Stationary location in bedroom (with monkey/palm tree) on first floor	Stationary	ISO 13794	Overloaded 40% (analyzed by indirect)	3.802	1,335	5,075	0.001	104	<0.0003
3601NRD-ATT-062918	Stationary sample in attic, low flow	Stationary low flow in attic	NA	Higher volume sample analyzed	2.038	70	142.7	—	—	NA
3601NRD-AT2-062818	Stationary sample in attic, high flow	Stationary high flow in attic	ISO 10312	—	4.032	70	282.2	0.1	10	<0.0134
3601NRD-CS1-062918	Stationary sample in crawl space, low flow	Stationary low flow in crawl space	NA	Higher volume sample analyzed	2.01	68	136.6	—	—	NA
3601NRD-CS2-062918	Stationary sample in crawl space, high flow	Stationary high flow in crawl space	ISO 10312	—	4.045	68	275.1	0.1	10	<0.0137
3601NRD-CS22-062918	Duplicate stationary sample in crawl space, high flow	Duplicate stationary high flow in crawl space	NA	Not analyzed as QC frequency requirement was met.	4.05	68	275.4	—	—	NA
3601NRD-FB01-062818	Field blank collected in the garage	Field blank	ISO 10312	—	—	<1	NA	—	10	0
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMε: Phase contrast microscopy equivalent										

TABLE 28
Parcel A Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
3637HRR-2-ABS1-LH-082818	Personal air sample cassette worn during 1 st set of light cleaning on the second story of the home at low-high flow rate	Field blank	ISO 10312	—	3.9316	120	471.8	—	10	0
3637HRR-2-ABS1-LH-082818	Personal air sample cassette worn during 1 st set of light cleaning on the second story of the home at low-low flow rate	Stationary in attic	NA	Higher volume sample was analyzed	2.6423	120	245.1	—	—	NA
3637HRR-1-ABS2-LH-082818	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	Stationary in attic	ISO 10312	—	3.9192	120	470.4	0.1	10	<0.0116
3637HRR-1-ABS2-LH-082818	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	Duplicate stationary in attic	ISO 10312	—	1.9615	120	235.4	0.1	10	<0.012
3637HRR-12-ABS3-LH-082818	Personal air sample cassette worn during 3 rd set of light cleaning on the first and second story of the home at low-high flow rate	Stationary in crawl space	NA	Higher volume sample was analyzed	4.6146	120	481.8	—	—	NA
3637HRR-12-ABS3-LH2-082818	Duplicate personal air sample cassette worn during 3 rd set of light cleaning on the first and second story of the home at low-high flow rate	Stationary in crawl space	ISO 10312	—	4.0165	120	482	0.1	10	<0.00969
3637HRR-12-ABS3-LH-082818	Personal air sample cassette worn during 3 rd set of light cleaning on the first story of the home at low-low flow rate	ABS (~4 L/min)	ISO 10312	—	2.0418	120	245	0.1	10	<0.008
3637HRR-2-ST1-082818	Stationary location in master bedroom on second floor	ABS (~2 L/min)	NA	Higher volume sample was analyzed	3.3817	1,360	4,603	—	—	NA
3637HRR-1-ST2-082818	Stationary location in kitchen/den on first floor	ABS (~4 L/min)	NA	Overloaded at 19%. Lower volume sample analyzed.	3.4949	1,360	4,753	—	—	NA
3637HRR-1-ST3-082818	Stationary location in the study on first floor	ABS (~2 L/min)	ISO 10312	—	3.5319	1,360	4,803	0.1	10	<0.01604
3637HRR-2-ST4-082818	Stationary location in the game room on second floor	ABS (~4 L/min)	ISO 10312	—	3.7503	1,360	5,100	0.1	10	<0.00783
3637HRR-2-ST5-082818	Stationary location in the child's bedroom on the second floor	Duplicate ABS (~4 L/min)	ISO 10312	—	3.44	1,360	4,678	0.1	10	<0.00783
3637HRR-AT1-082818	Stationary low flow sample in attic	ABS (~2 L/min)	NA	Higher volume sample was analyzed	2.0711	80	165.7	—	—	NA
3637HRR-AT2-082818	Stationary high flow sample in attic	Stationary	ISO 13794	Overloaded at 40% (analyzed by indirect)	4.6659	80	325.3	0.001	58	<0.0001
3637HRR-AT22-082818	Duplicate stationary high flow sample in attic	Stationary	ISO 13794	Overloaded at 35% (analyzed by indirect)	3.9326	80	314.6	0.001	56	<0.0003
3637HRR-CS1-082818	Stationary low flow sample in crawl space	Stationary	ISO 13794	Overloaded at 50% (analyzed by indirect)	2.0907	100	209.1	0.001	55	<0.0001
3637HRR-CS2-082818	Stationary high flow sample in crawl space	Stationary	ISO 13794	Overloaded at 37% (analyzed by indirect)	3.841	100	389.4	0.001	52	<0.0001
3637HRR-FB01-082818	Field blank collected in the garage	Stationary	ISO 13794	Overloaded at 54% (analyzed by indirect)	—	<1	0	0.001	56	<0.0001
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMe: Phase contrast microscopy equivalent										

TABLE 29
Parcel Q Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCMe f/cc)	Grid Openings Analyzed	Sample Result (PCMe f/cc)
5333NRD-1-ABS1-LH-082918	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-high flow rate	Field blank	ISO 10312	—	3.9893	120	478.72	—	10	0
5333NRD-1-ABS1-LL-082918	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-low flow rate	Stationary in attic	ISO 10312	—	2.0503	120	246.04	0.1	10	<0.02786
5333NRD-1-ABS2-LH-082918	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	Stationary in attic	NA	Sample not submitted due to unknown pump run-time.	3.9874	120	478.49	—	—	NA
5333NRD-1-ABS2-LL-082918	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	Stationary in crawl space	NA	Higher volume sample was analyzed.	2.0579	120	246.95	—	—	NA
5333NRD-1-ABS3-LH-082918	Personal air sample cassette worn during 3 rd set of light cleaning on the first story of the home at low-high flow rate	Stationary in crawl space	ISO 10312	—	3.9726	120	476.71	0.1	10	<0.01357
5333NRD-1-ABS3-LH2-082918	Duplicate personal air sample cassette worn during 3 rd set of light cleaning on the first story of the home at low-high flow rate	Duplicate stationary in crawl space	ISO 10312	—	4.0119	120	481.43	0.1	10	<0.01355
5333NRD-1-ABS3-LL-082918	Personal air sample cassette worn during 3 rd set of light cleaning on the first story of the home at low-low flow rate	ABS (~4 L/min)	NA	Overloaded 17% (analyzed lower volume sample per laboratory recommendation)	2.0216	120	242.59	—	—	NA
5333NRD-1-ST1-082918	Stationary location in master bedroom on the first floor	ABS (~2 L/min)	ISO 10312	—	3.584	1,365	4,892.16	0.1	10	<0.01534
5333NRD-1-ST2-082918	Stationary location in kitchen/den on first floor	ABS (~4 L/min)	ISO 13794	Overloaded 28% (analyzed by indirect)	3.514	1,368	4,807.15	0.1	10	<0.0165
5333NRD-1-ST3-082918	Stationary location in the study on first floor	ABS (~2 L/min)	NA	Overloaded 26% (analyzed higher volume sample)	3.5494	1,366	4,848.48	—	—	NA
5333NRD-1-ST4-082918	Stationary location in the dining room on first floor	ABS (~4 L/min)	NA	Overloaded 20% (analyzed lower volume sample)	3.4848	1,367	4,763.72	—	—	NA
5333NRD-1-ST5-082918	Stationary location in the child's bedroom on the first floor	Duplicate ABS (~4 L/min)	NA	—	3.6834	1,369	5,042.57	—	—	NA
5333NRD-AT1-082918	Stationary low flow sample in attic	ABS (~2 L/min)	ISO 10312	—	2.0224	67	135.5	0.1	10	<0.01556
5333NRD-AT2-082918	Stationary high flow sample in attic	Stationary	ISO 13794	Overloaded 59% (analyzed by indirect)	—	—	—	0.001	54	<0.0003
5333NRD-CS1-082918	Stationary low flow sample in crawl space	Stationary	ISO 13794	Overloaded 60% (analyzed by indirect)	1.98245	70	138.78	0.001	110	0.0003
5333NRD-CS2-082918	Stationary high flow sample in crawl space	Stationary	ISO 13794	Overloaded 55% (analyzed by indirect)	3.9733	70	278.13	0.001	53	<0.0003
5333NRD-CS22-082918	Duplicate stationary high flow sample in crawl space	Stationary	ISO 13794	Overloaded 80% (analyzed by indirect)	3.9781	70	278.47	0.001	111	<0.0003
5333NRD-FB01-082918	Field blank collected in the garage	Stationary	ISO 13794	Overloaded 55% (analyzed by indirect)	—	<1	0	0.001	53	<0.0003
Notes: ABS: activity based sampling f/cc: filters per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMe: Phase contrast microscopy equivalent										

TABLE 30
Parcel W Post Excavation Air Monitoring Results

Sample ID	Sample Location	Sample Type	Test Method	Analysis Notes	Average Flow Rate (L/min)	Sample Duration (hours)	Total Sample Volume (L)	Post-Remediation Action Level (PCM/e f/cc)	Grid Openings Analyzed	Sample Result (PCM/e f/cc)
3442OFR-1-ABS1-LH-083018	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-high flow rate	Field blank	ISO 10312	--	3.9631	120	475.6	--	10	0
3442OFR-1-ABS1-LL-083018	Personal air sample cassette worn during 1 st set of light cleaning on the first story of the home at low-low flow rate	Stationary in attic	NA	Higher volume sample was analyzed	2.003	120	240.3	—	—	NA
3442OFR-1-ABS2-LH-083018	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	Stationary in attic	ISO 10312	--	3.9605	120	475.3	0.1	10	<0.01347
3442OFR-1-ABS2-LH2-083018	Duplicate personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-high flow rate	Duplicate stationary in attic	ISO 10312	—	3.9719	120	476.6	0.1	10	≤0.01345
3442OFR-1-ABS2-LI-083018	Personal air sample cassette worn during 2 nd set of light cleaning on the first story of the home at low-low flow rate	Stationary in crawl space	NA	Higher volume sample was analyzed	2.0733	120	248.8	—	—	NA
3442OFR-1-ST1-083018	Stationary location in master bedroom on first floor	Stationary in crawl space	ISO 10312	—	3.6108	1,355	4,893	0.1	10	<0.01365
3442OFR-1-ST2-083018	Stationary location in kitchen/den on first floor	ABS (~4 L/min)	ISO 13794	Overloaded 31% at analysis. Analyzed by indirect	3.5418	1,355	4,799	0.1	10	0.0166
3442OFR-1-ST3-083018	Stationary location in utility room on first floor	ABS (~2 L/min)	NA	Overloaded 23% at analysis. Higher volume sample was analyzed.	3.8081	1,355	5,160	—	--	NA
3442OFR-AT1-083018	Stationary low flow sample in attic	ABS (~4 L/min)	NA	Overloaded 36% at analysis. Lower volume sample analyzed.	2.0649	70	144.5	—	—	NA
3442OFR-AT2-083018	Stationary high flow sample in attic	Duplicate ABS (~4 L/min)	NA	Overloaded 34% at analysis. Lower volume sample analyzed.	4.0032	70	280.2	—	—	NA
3442OFR-AT22-083018	Duplicate stationary high flow sample in attic	ABS (~2 L/min)	ISO 10312	--	4.0095	70	280.7	0.1	10	<0.01517
3442OFR-CS1-083018	Stationary sample in crawl space	Stationary	ISO 13794	Overloaded 60% at analysis. Analyzed by indirect.	2.035	67	136.4	0.001	54	0.0003
3442OFR-CS2-083018	Stationary sample in attic above garage/kitchen	Stationary	ISO 13794	Overloaded 60% at analysis. Analyzed by indirect.	4.1263	67	276.5	0.001	110	<0.0003
3442OFR-FB01-083018	Field blank collected in the garage	Stationary	ISO 13794	Overloaded 60% at analysis. Analyzed by indirect.	--	<1	0	0.001	51	<0.0003
Notes: ABS: activity based sampling f/cc: fibers per cubic centimeter L: Liters L/min: Liters per minute NA: not analyzed NR: Not reported PCMs: Phase contrast microscopy equivalent										